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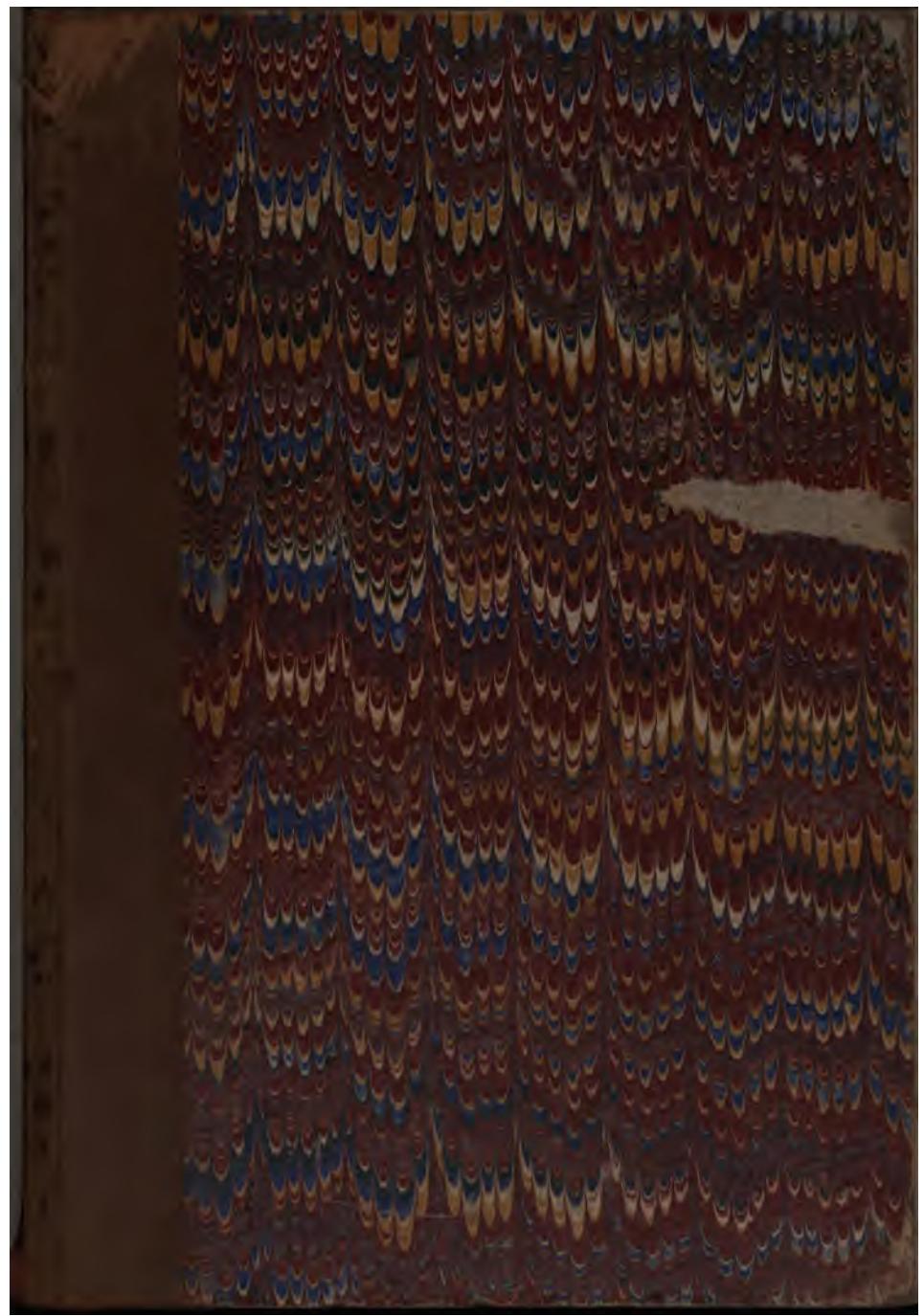
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# PATENTS FOR INVENTIONS.

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## ABRIDGMENTS

OF THE

## Specifications

RELATING TO

THE MANUFACTURE OF  
PAPER, PASTEBOARD, AND  
PAPIER MÂCHÉ.

---

## PART II.

---

CUTTING, FOLDING, AND ORNAMENTING; INCLUDING  
ENVELOPES, CARDS, PAPER HANGINGS, &c.

PRINTED BY ORDER OF THE COMMISSIONERS OF PATENTS.

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## P R E F A C E.

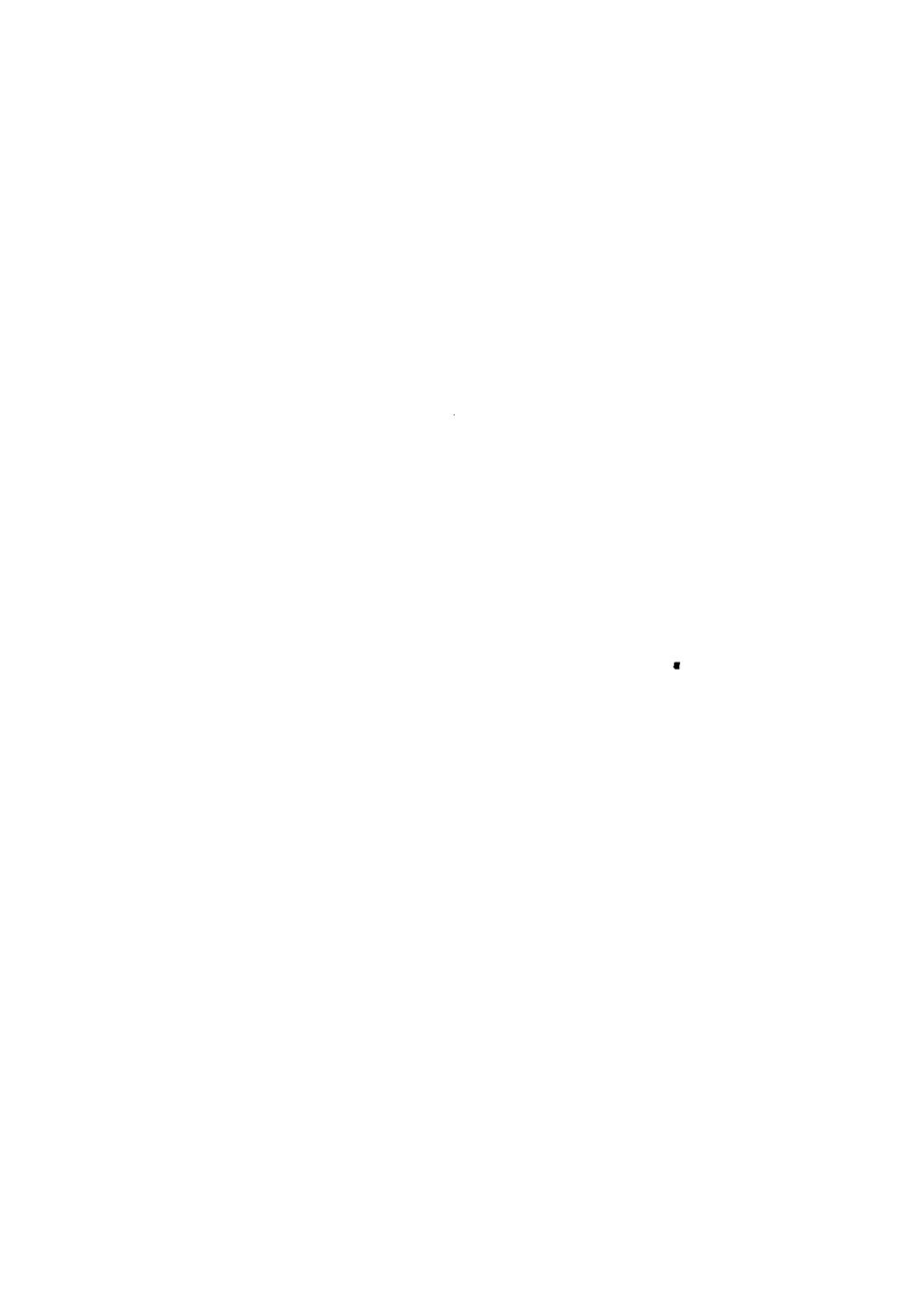
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THE Indexes to Patents are now so numerous and costly as to be placed beyond the reach of a large number of inventors and others to whom they have become indispensable.

To obviate this difficulty, short abstracts or abridgments of the Specifications of Patents under each head of Invention have been prepared for publication separately, and so arranged as to form at once a Chronological, Subject-matter, Reference, and Alphabetical Index to the class to which they relate. As these publications do not supersede the necessity for consulting the Specifications, the prices at which the latter are sold have been added.

B. WOODCROFT.

*Great Seal Patent Office,  
May 1859.*



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MANUFACTURE  
OF  
PAPER, PASTEBOARD, AND  
PAPIER MÂCHÉ.

(PART II.)

---

A.D. 1692, October 18.—N° 304.

BAYLY, WILLIAM.—“Printing all sorts of paper, of all sorts “of figures and colours whatsoever, with severall engines made of “brasse and such other like metall, with fire, without any paint “or staine, which will be usefull for hanging of rooms and such “like uses.”

[No Specification enrolled.]

A.D. 1692, October 19.—N° 305.

GIFFORD, NATHANIEL.—This is also a grant, and is in correction of the grant A.D. 1691, N° 284. By this patent the grant is made to extend to the making of engines for the purpose of “beautifying, figuring, imprinting, and imbellishing” the papers referred to in the previous patent.

[Printed, 3d. No Specification enrolled.]

A.D. 1724, January 28.—N° 461.

REDRICH, ROBERT, and JONES, THOMAS.—Grant for “four-“teen yeares” to “enjoy the whole profit, benefit, commodity, and “advantage” accruing from the invention of “A new art or “method as well for staining, vaining, spotting, clouding, “damasking, or otherwise imitating the various kinds of marble, “porphiry, and other rich stones and tortoiseshell, on wood, stone, “and earthenware; and all and every such goods, wares, utensils, “and things as are cut, made, or fashioned thereout, as for mak-“ing, marbling, veining, spotting, staining, clouding, and da-“masking any linnen, silks, canvas, paper, and leather.”

[Printed, 4d. No Specification enrolled.]

## 2 PAPER, PASTEBOARD, AND PAPIER MÂCHÉ.

A.D. 1731, May 20.—N<sup>o</sup> 530.

POPE, SAMUEL.—Grant for fourteen years “A new art for  
“ marbling paper with a margent, never practised by any person  
“ whatsoever before he invented it, which is performed by a  
“ method entirely new, by taking off the colours from a body of  
“ water prepared after a particular manner, with a proper strength  
“ for supporting the said colours, and make them flow upon the  
“ surface of it, whereby the said colours are more easily taken off  
“ upon paper; which will be of very great service to the publick,  
“ by preventing the counterfeiting of merchant notes, bills of  
“ exchange, &c.

[Printed, 4d. No Specification enrolled.]

A.D. 1753, August 22.—N<sup>o</sup> 685.

DIGHTON, EDWARD.—“An entire new method of manufac-  
“ turing paper for hanging and ornamenting of rooms, and other  
“ purposes, and that the same will be of great use and benefit to  
“ the publick.” The Patentee “craveth or etcheth his design or  
“ pattern [on copper plates, or plates of brass, pewter, iron, tin,  
“ steel, gold, silver, or any compound metals] with a graver or  
“ needle, after which the design or pattern is impressed on paper  
“ under a rolling press for hangings used as furniture for rooms,  
“ closetts, &c.; and when so done the aforesaid paper is painted  
“ or coloured by hand, with pencils called camell hair pencils.”  
“ The colours and stains used” are as follows:—“For a blue,  
“ prussian blue ground in vinegar; for a red, carmine mingled in  
“ vinegar; for a yellow, saffron steeped in boiling water; for a  
“ green, sap green steeped in vinegar; for another green, verdi-  
“ grease ground in vinegar; for a brown, tobacco stalks steeped  
“ in boiling water; for a purple, carmine mingled with prussian  
“ blue. Colours used in printing off the aforesaid plates are,  
“ Frankfort black, brown umber, rose pink, rock indigo. Gold  
“ size in gilding the afores<sup>d</sup> work is made of linseed oyl, amber,  
“ red lead, umber, and turpentine oyl boyled and mingled all  
“ together. Another gold size is gum arabick, sugar candy, and  
“ vermilion, boiled together.”

[Printed, 3d.]

A.D. 1762, March 10.—N<sup>o</sup> 770.

HOUSEMAN, HENRY.—“Method of gilding, colouring, and  
“ marbling of paper.” For marbling of paper the patentee takes of

" gum tragogant three or four pounds, and of alum about half a  
 " pound, and put them into hott water; let them stand twelve  
 " hours, then mix them with cold water till of a thickish con-  
 " sistency; then take of coogell lack three or four pounds, made  
 " fine and ground with water and any kind of spirits; of indigo,  
 " about a quarter of a pound; of chalk about five pounds, mixed  
 " together; of orange opiate about one pound; of stone oker  
 " about one pound; of aurum pigmentum about one pound, all  
 " made fine and ground with water; the preparation of tragagant  
 " and alum to be put into a square trough the size of the paper.  
 " Make the colours all thin with water and a little spirits, and  
 " put them upon the preparation of tragagant and alum in the  
 " trough, with woollen mops, to which put about five spoonfulls  
 " of gall, or any other quantity, untill the colours spread them-  
 " selves upon the tragagant and alum. The pattern is formed  
 " according to fancy, upon the preparation of tragagant and  
 " alum, with a wooden pin and a wired comb drawn over the  
 " colors; then lay on the paper and it will receive the colours;  
 " when dry, to be glazed with a flint stone made smooth for the  
 " purpose. For colouring paper,—viz. brown, with black spotts—  
 " take of terra umbra and starch a pound each, mixed fine, and  
 " lay it on the paper, according to fancy, with a brush, and dry it;  
 " then take half a pound or a pound of lamb black, ground fine  
 " with water; make it thin with water and spirits, with which  
 " spott the paper with a brush, dry it, and then glaze it." For  
 " 'yellow ground,' take equal quantities of ' yellow berries and  
 " 'starch.' For a ' blue ground,' take indigo, chalk, and starch" to  
 " which other colours may be added. "For gilding paper, take  
 " gold or silver leaf, the colour to be taken from Brasil wood,  
 " rasped and boiled, indigo, lacemus, statzmeing, French beer,  
 " French grinspan, all made fine and thinned with water and  
 " spirits; the pattern to be engraved on copper, upon which the  
 " colours are to be laid; and thereon lay the paper and press it  
 " with a skrew press."

[Printed, &c.]

A.D. 1767, December 7.—N° 886.

BERKENHOUT, JOHN.—"A method, entirely new, of dicing,  
 " flowering, colouring, or marking playing cards, so as to render  
 " them easily distinguishable from the white cards now used."  
*This invention is* "to be performed by printing, impressing, paint-

#### 4 PAPER, PASTEBOARD, AND PAPIER MÂCHÉ.

“ ing, flowering, dicing, stamping, staining, figuring, or otherwise  
“ marking or colouring the said cards on the back, so as to render  
“ them in anywise different in appearance from the cards now in  
“ use, and thereby prevent the inconveniency arising from mixing  
“ of two packs, which are not thus distinguished from each other.  
“ The means above recited of printing, impressing, painting,  
“ flowering, dicing, stamping, staining, figuring, or otherwise  
“ marking or colouring the said cards are effected and performed  
“ in the manner and method by which the arts of painting, colour-  
“ ing, staining, stamping, or printing, by hand, letter press, or  
“ rolling press, are usually executed.”

[Printed, 3d.]

A.D. 1792, January 16.—N° 1845.

ECKHARDT, ANTHONY GEORGE.—“ Invention of laying on or  
“ imprinting grounds or coats of composition, or painting upon  
“ sattin, silks, cotton, linen, velvets, leather, or any kind of cloth,  
“ stuff, or paper, for the receiving impressions of engraved copper  
“ plates in all sorts of colours, and for other purposes.” The  
“ first ground or coat ” “ being for the reception of plain or ordi-  
“ nary prints or ornaments, is prepared by laying on the finest  
“ and thinnest satin or silk, linen, cloth, or other suitable thing,  
“ a thin coat of the composition No. 1, herein-after mentioned,  
“ with a colour knife. When the composition is dry it must be  
“ painted over with a brush, very thin, in oil, or any other colour  
“ desired. The sattin, or other suitable thing, being thus pre-  
“ pared, will then receive the copper plate impression intended to  
“ be made, by the use of a common rolling copper printing press.  
“ The second, being for receiving impressions of superior or best  
“ prints, is to be done in the following manner :—First, take off  
“ by means of transparent paper, or by any other means more  
“ convenient, the size and shape of the copper plate print, paint-  
“ ing, or drawing intended to be printed upon the grounds ; then  
“ provide a well burnished copper plate, of larger dimensions than  
“ the subject intended to be produced. Trace upon this plate the  
“ outline of the print, drawing, or painting, with a dry needle or  
“ tool ; then work down the surface of the plate within the lines  
“ all over, perfectly smooth and even, of a sufficient depth to hold  
“ the necessary body of colour, with tools called rollers or cham-  
“ pignions, used by French engravers, or by any other tools used  
“ *in the mezzotints or dotting way of engraving*, which work

## PAPER, PASTEBOARD, AND PAPIER MÂCHÉ. 5

“ must afterwards be scraped gently all over, to make it perfectly even, with an instrument called by engravers a scraper. The plate thus prepared is then ready to receive the colour or composition No. 2, which is to be done in the following manner:—  
“ Fill the plate with the colour or composition; then wipe it in the manner used by copper plate printers, and take off the impression with a good rolling printing press.”

“ Preparation of the composition No. 1.—Take three fourth parts of fine starch, and boil it in water to the consistency commonly used by paper stainers; then add, while it is hot, one fourth of bees’ or virgin wax (ready melted) gradually, by small degrees, stirring the starch during the process; when cold it is fit for use.”

“ Preparation of the composition No. 2.—This is composed of nut oil, burnt like printing oil; in common work burnt linseed or ordinary printing oil will do. Poppy oil, or other oils or syrups may be substituted for nut oil. These oils are to be mixed with such colours as are wanted.”

[Printed, 3d. See Rolls Chapel Reports, 6th Report, p. 185.]

A.D. 1793, April 30.—Nº 1953.

ECKHARDT, FRANCIS FREDERICK.—“ Method of preparing and printing paper in different patterns, and to silver it over with fine silver leaves, so as to resemble damask lace and various silk stuffs, to be used for hangings and other furniture for rooms.” The invention is carried out in the following manner:—  
“ When the paper is coloured in the ordinary course, size it properly with a size of isinglass, parchment, or common size, so as to bear an oil or a varnish gold size. This being dry, lay with a printing block or brush on those parts where the ornaments are intended to appear, gold size or any of the other compositions that will answer the same purpose; when the gold size or composition is nearly dry lay on real fine silver leaves and then size the paper well two or three times, and when dry varnish it over with any of the various sorts of varnish which will resist damp.”

[Printed, 3d. See Repertory of Arts, vol. 2, p. 87; Rolls Chapel Reports, 6th Report, p. 187.]

A.D. 1796, April 6.—Nº 2102.

HANCOCK, JOHN GREGORY.—“ Paper ornamented by embossing or engraving.” “ The ornament may be embossed or

## 6 PAPER, PASTEBOARD, AND PAPIER MÂCHÉ.

“ engraved upon the paper, in the same or a similar manner as “ impressions are or may be made upon other thin substances, “ such as copper, tin, &c., by its being put between a die and its “ force of the full size of the paper to be ornamented, or at least “ of the size of the ornament, which ornament may be engraved “ upon the dye in such form and stile as fancy may suggest. The “ die force and paper are in this state compressed by any of the “ powers or mechanical means usually employed in such cases, “ such as a press, stamp, rolls, &c. The substances which it may “ be used for forming forces [counter dies] in the ornamenting of “ paper are, any ductile metal, or composition of metals, or lea- “ ther, paper, linen, or other material that will receive and retain “ sufficiently the impression of the die. For the more ready and “ accurate adaptation of the force to the die, I sometimes use “ them connected by a joint or hinge.”

[Printed, 6d.]

A.D. 1796, November 19.—N° 2147.

COBB, THOMAS.—“ A method of making coloured paper supe- “ rior for brightness and richness of colour, to any made by any “ other person, and which paper when made after the manner “ invented by me, may be used as well for the purpose of hanging “ rooms, as for writing, printing, drawing, and various other “ purposes of paper.” “ When the rags or other materials are suffi- “ ciently washed by means of the paper engine, made white, and “ reduced to half stuff in the usual manner for beating, I drain “ off the water and convey the half stuff intended to be coloured “ into the vessel or vessels in which it is to be dyed, where I “ subject it to the processes commonly used in dying of linen, “ cotton, silk, or wool, according to the materials of which the “ half stuff is composed. I only vary by preparing separately “ from the usual materials for dyeing a clear decoction or infusion “ of the dyeing materials (for producing bright and rich colours, “ viz., scarlet, yellow, green, pink, mazarine and China blue), “ which, previous to the half stuff being immersed therein, are “ strained, filtered, or allowed time to deposit their grosser parts. “ In cases where heat must necessarily be applied during the “ dyeing of the half stuff, which are well known to dyers, I use “ false bottoms to the vessel or vessels in which it is to be dyed, “ which false bottoms prevent the half stuff from touching the “ bottom of the vessel, and thereby being injured by the fire, and

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“ should be pierced with small holes to admit the circulation of the decoctions or infusions in the vessel. When the half stuff is sufficiently coloured, I remove it from the dyeing vessels, and return it to the engine; and after having washed it for a short time in those cases which require it, in order to brighten the colours, and which are well known to dyers, I beat it by the paper engine as usual into pulp or stuff for the vat, after which it is made into paper in the usual manner. In such colours as are dyed cold, the decoctions or infusions may be mixed with the half stuff whilst in the engine itself, or it may be dyed in a separate vessel.”

[Printed, 3d. See Rolls Chapel Reports, 6th Report, p. 191.]

A.D. 1799, December 20.—N° 2365.

LUDLOW, EDMUND EDWARD.—“ Intire new or improved playing cards, to be named ‘ Brilliant new invented knights’ cards.’ The utility of this invention is, all but aces and court cards, not requiring to be turned, by having entire new pipe to render each suit perfectly distinct, to remove any mistakes in the turn of dealing, and to prevent the misplacing of any card in playing, without any immediate discovery. The particulars of the cards are intended to be as nearly as possible as follows:—Spades, hearts, & clubs to be as much reversed as conveniently can be done, so as to appear as much as possible the same both ways; and if upon tryal it should be found expedient, the court cards shall be done in the same manner.” The Patentee proposes also to ornament the various cards, more particularly the aces and court cards, with different devices, such as “ Garter, motto, & date of the Order of the Thistle, the Order of St. Patrick, the Order of the Bath, the Order of the Garter, &c., with the Lyon and unicorn, and an under motto. The kings are intended to have sceptres, stars, and garters; the queens their respective crowns, knotts, and ribbons, to which is to hang their badge; the knaves’ belts and broadswords, the emblems of their orders, agreeable to the aces of their suits, all of them at top their proper pip, and at the bottom another the very reverse.”

[Printed, 3d. See Repertory of Arts, vol. 13, p. 145; Rolls Chapel Reports, 6th Report, p. 148.]

A.D. 1806, July 24.—N° 2950.

FOURDRINIER, HENRY.—“ A machine for cutting paper on a different principle from any hitherto used.” This cutting

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machine consists of a knife set in a frame which is caused to move up and down by means of a screw; the screw being actuated by a handle and intermediate wheels. The paper to be cut (say a ream in thickness) may be placed on a roller above a horizontal frame or table, or on the table itself, over which has been stretched a moveable web which may be an endless web caused to revolve round rollers placed at each end of the table, or it may be unwound from one roller and wound on the other; and on the travelling web, and travelling with it, are placed a number of blocks or pieces of wood upon which the knife descends and cuts the paper to the desired size.

[Printed, 6d. See *Repertory of Arts*, vol. 10 (*second series*), p. 321; *Rolls Chapel Reports*, 7th Report, p. 195.]

A.D. 1806, July 24.—N° 2951.

FOURDRINIER, HENRY.—“The method of making a machine “for manufacturing paper of an indefinite length, laid and wove, “with separated moulds.” This invention consists, first, in placing the moulds end to end “successively in contact, so as to form “one long mould, upon which paper can and may be made in like “manner as if the whole length or series had consisted of one “single mould.” The ends of the frames are made thin, and the office of the “deckle” may be performed by means of a bar attached by hinges to the sides of the frames. Secondly, consists of a platform to place the moulds upon, having side-rails or guides, or a series of parallel rollers with flanges, to allow of the moulds moving to and fro, but not sideways. To the platform is given a horizontal movement, in any desired direction, by suitable mechanical means. Thirdly, consists in placing over the platform a vessel containing the paper stuff so as to allow “the moulds to “be successively introduced in their places upon the platform.” The vessel is supplied with an agitator, with holes to regulate the flow, and with a trough to convey the stuff.

Fourthly consists in placing two revolving cylinders at the far end of the series of moulds, around which is passed an endless web of felting in the manner of a jack towel, for the purpose of taking off the paper from the moulds in one continuous sheet. As the moulds advance towards the first cylinder, which may be effected by any suitable mechanical means, fresh moulds are introduced at the other end of the platform and filled with stuff.

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The paper on proceeding forward with the endless web is caused to pass between pressing rollers.

[Printed, 4d. See *Repertory of Arts*, vol. 10 (*second series*), p. 327; Rolls Chapel Reports, 7th Report, p. 193.]

"Note.—2950, 2951, a Specification is enrolled in the Petty Bag, in pursuance "of an Act of Parliament extending to fifteen years, from August 14, "1807, the term of certain Letters Patent, Nos. 2487 and 2708), assigned "to H. and S. Fourdrinier and J. Gamble."]

A.D. 1807, June 30.—Nº 3056.

DICKINSON, JOHN.—“Machinery for cutting and placing “paper.” The paper to be cut being wound on reels is delivered under a roller on to an endless revolving felt, which carries it forward in any desired number of sheets, and delivers it between two carrying rollers. The paper, in any desired number of thicknesses, is then caused to pass in a continuous manner from the carrying rollers, over another roller in which grooves are cut, or placed at suitable distances, over which is caused to revolve, at a high speed, a spindle with circular knives placed on it at distances corresponding to the grooves on the roller beneath. As the paper moves forward it is cut longitudinally to the desired width. The longitudinally cut paper then passes between two “spindles,” and is delivered between two rods or parallel bars which are attached to revolving endless chains, and placed at distances to suit the size of the paper desired. As the paper travels, held by these bars, it passes the “transverse cutting apparatus,” which consists of a knife between “two metal bars,” placed under the paper, and two other metal bars, with a slit or groove between them placed above them. A suitable “double snail horn” or cam elevates the lower bars till the paper is clipped between the lower and upper bars; the cutting knife being then further and separately elevated by the double cam cuts the paper of the desired length.

[Printed, 1s. See *Repertory of Arts*, vol. 30 (*second series*), p. 262; Rolls Chapel Reports, 7th Report, p. 105.]

A.D. 1807, August 14.—Nº 3068.

FOURDRINIER, HENRY, FOURDRINIER, SEALY, and GAMBLE, JOHN.—“Making paper by means of machinery.” This invention consists “in the using of a revolving web of wove “wire, or other similar material or thing applicable in like manner “as such web, the same being made endless by joining its ends “together, similar to a round towel, or by having it wove endless,

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“ and applying such web to the making or manufacturing of paper according to the arrangement and application of the revolving or endless web before mentioned in connection with other mechanical apparatus.” The paper pulp in the vat, which is kept agitated, being brought by admixture of water to “the required consistency, is suffered to run through certain apertures in the side or front of the vat, the flow being regulated by a slide valve, and conducted from thence by an inclined plane in an uniform stream upon the surface of the revolving web [called the under web], which is so placed that its surface shall be as nearly level as possible, and have its revolving motion in the direction in which the stream of pulp runs from the vat.” The endless web is caused to revolve round two extreme rollers, and several small rollers are placed under the upper part, upon which the paper is formed, to support the travelling bed with its weight of paper. The width of the sheet of paper is determined by two pieces of wood placed on the travelling bed, and pressing on two endless belts of leather, which travel with the endless web, one on each side; corresponding pieces of wood and travelling straps being also applied under the travelling bed. These together are called “dickles.” A flap of oiled silk is placed where the pulp falls on to the web of wire, one edge of which rests on the surface of the web, and extends from dickle to dickle, for the purpose of preventing the pulp from flowing backwards. As the web progresses forward with the coating of paper upon it, it is caused to pass between two rollers covered with felts or flannel, called “the wet press rollers;” and in order to protect the pulp from injury by friction of the upper one of these rollers, and the shorter endless web (called the upper web), which may be made of felt, is caused to travel with and above it, so as to be constantly interposed between the pulp and the upper wet press roller. The paper after having been thus passed between the wet press rollers is conducted on to another endless web, called the “felting,” by means of the roller called the “couching roller,” and is carried forward and caused to pass between two “dry press” rollers made of brass, and turned perfectly true, to which considerable pressure may be given. The paper is then sufficiently dry to be wound on reels.

To the roller nearest the vat, round which the “under web” revolves, a quick shaking motion may be given, by means of a crank, which is communicated to the web. The endless webs are provided with suitable means for adjusting their tension, and with

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guides for conducting them in a proper direction, and correct speeds of all the parts is secured by means of adjustable or expanding riggers or band wheels, as described and shown in the drawing. The water which falls from the web, which contains "paper stuff, blue, size, &c.," may be returned to the vat by means of pumps or elevating scoops.

The paper, when manufactured, is drawn off the reel, and placed on a table to be cut into sheets. This operation may be effected by placing one or more pairs of steel plates across and level with the surface of the table, the upper edges of which should be parallel with and about one-twentieth of an inch from each other, and causing a corresponding number of small wheels, fitted in a frame with an edge sharpened by being basiled away on both sides, similar to the edge of a hard or cold chisel, to roll across from one side of the table to the other, the edges of these wheels being applied between the opposed edges of the plates. These plates are placed angularly towards each other, and in section are like the strokes of the letter A; the outer edge of each being basilled off by grinding.

[Printed, 2s. See Rolls Chapel Reports, 7th Report, p. 195.]

A.D. 1809, January 19.—N° 3191.

DICKINSON, JOHN.—"Improvements on my former patent "machinery for cutting and placing paper [A.D. 1807, June "30, N° 3056]; and also certain machinery for the manu- "facture of paper by a new method." The "cutting and placing "paper" is effected by a circular knife-edged cutter, revolving at a high speed, acting transversely on the sheet of paper as it is unwound from a reel. The paper is passed from the reel, and over a short table. The end of the paper is then seized and drawn a suitable length forward by a pair of tongs attached to a sliding frame, to which a to-and-fro motion is given by means of a rod. The rod is actuated by a chuck and pin and counter weight; and the tongs are caused to bite the paper as the rod makes its forward stroke, and on its return to open and drop the cut paper. A bar, having a groove in its upper surface, is placed under the sheet of paper, and is elevated to it by means of springs, and at the same moment the revolving cutter, working in the groove, is caused to move across the paper by means of a cord attached to a weight. A swinging roller to draw the end of the sheet of paper a little

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back, after it is cut, is placed on the sheet, between the reel and the cutter.

The "machinery for the manufacture of paper" is constructed as follows :—"I take a brass cylinder, perfectly smooth inside and " outside; and, excepting a small portion at each end, which is " left plane, I turn the outside so as to resemble a screw, the " threads of which are about a quarter of an inch apart and the " twenty-fifth part of an inch in depth, with a round edge. I then " drill holes between the threads, which are cut in a taper form, " the diameter at top being the width of the interval between " the threads, and at the bottom reduced to one half that size. " The space on the outer surface of the cylinder left between these " holes on each side is equal to the breadth of the thread. Notches " are cut in the threads for the purpose of letting in cross wires, " the diameter of which is equal to that of the threads, so that " when they are laid into the notches, and soldered or otherwise " fastened down, the surface of the cylinder will resemble net " work, with openings of an oblong shape, and having the sur- " faces of all the interstices plane with each other, and wounded " to an equal curve. It is then covered with an endless web of " woven wire, which is drawn tight over it. The ends of the " cylinder are cut down and rabbed, so that a ring may be made " to slide on each end, and the ends of the wire are fastened to " this ring by means of small plates, which are put over the wire " and screwed down upon the rings by means of screws which " pass through the wire. These rings are also furnished with " other screws for the purpose of extending them out from the " cylinder, and the wire being fastened to them, it is by that " means stretched and drawn tight down upon the surface of the " cylinder."

In the process of making paper the "stuff" is admitted from the engine into a circular chest, and there kept in motion by suitable agitators; it is then conveyed by a pipe into a smaller vessel, also supplied with agitators, the supply to which and the level of the stuff therein being regulated by a ball and cock. A pipe with a cock descends from the smaller vessel, and conducts a regulated quantity of the stuff into another pipe, through which there is a constant and rapid flow of water, and it carries away the supply of pulp into a third vessel supplied with agitators. The *diluted stuff* is then caused to flow into a fourth vessel or trough, called the "buck," which is fitted tight on to the cylinder already

described. As the cylinder revolves the water flows or filters through the woven wire, and deposits, in endless succession, on the surface of the circular web a coating of the fibres of the rag requisite for the composition of a sheet of paper. The process of filtration may be accelerated by exhausting the air from the interior of the cylinder in the manner described, and the water thus obtained may be returned to the agitated vessels. The coating of fibre is then pressed and taken off the cylinder by a roller that revolves in contact with it, and when further pressed by another roller is rendered sufficiently dry for leading off to the cutting. Instead of the cylinder above described an endless web of woven wire, carried round cylinders, may be used.

[Printed, 1s. 5d. See *Repertory of Arts*, vol. 31 (*second series*), p. 1; Rolls Chapel Reports, 7th Report, p. 108.]

A.D. 1809, March 20.—N° 3219.

**VALENTINE, CHARLES.**—“A new mode of ornamenting and “painting all kinds of japanned and varnished wares of metal, “paper, or any other compositions and various other articles.” This invention consists, firstly, in the mode of producing a “painted “or gilded effect of a landscape, figure, &c.,” “on the surface of “any painted, varnished, or gilded body.” Representations in four colours may be obtained thus:—Four plates being suitably engraved and supplied with proper colours are successively impressed on a sheet “of fine fan, tissue, or other soft paper,” previously “prepared with gum arabic, isinglass, or any other glutinous body dissolved in “soft water;” the impression must then be suffered to dry in the air for the space of a week, or till the shades are perfectly dry, then “pencil in the whole of the shadows “from outline to outline,” and let the whole harden in the air for the space of a day or two. The “impression or painting” so obtained is then applied to the surface of wood, paper, &c., previously prepared with “a thin coat of copal varnish,” and only partially dried, and gently press it down with a sponge well moistened with warm water till the whole is evenly laid. In a few minutes the gum will be sufficiently dissolved and may be washed away with the paper, leaving the “finished painting of four “shades.” Impressions may be made from “blocks” on the prepared fan paper, and transferred, as before described, to the desired surface. Various colours and gilding may be transferred by the above means.

[Printed, 3d. See *Repertory of Arts*, vol. 16 (*second series*), p. 333; Rolls Chapel Reports, 7th Report, p. 108.]

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A.D. 1810, June 19.—Nº 3352.

BELL, WILLIAM.—“An improved machine for the purpose of “ cutting pasteboard or cards out of pasteboard or paper, and for “ cutting various other articles,” such as parchment, leather, hay, straw, and rags. The Patentee claims the use “of a number of “ cutters made circularly.” Two horizontal spindles are placed one over the other in a frame, and driven by spur wheels working into each other. On the spindles are placed circular cutters, between which the article to be cut is caused to pass. The cutters may be suitably set at the required distances from each other.

[Printed, 5d. See Rolls Chapel Reports, 7th Report, p. 210.]

A.D. 1811, May 21.—Nº 3452.

DICKINSON, JOHN.—“Improvements in my patent machinery “ for making, cutting, and placing paper. [See A.D. 1809, January 19, Nº 3191.] The object of the first improvement is “to substitute notches for holes, as formerly described, and to “make a cylinder affording more complete support to the outer “ webb of wove or laid wire.”

The second improvement “relates to the passage of the water “ through and out of the cylinder.” The cylinder is made closed at both ends, and a large pipe is introduced into the interior of the cylinder through its axis; from this pipe smaller pipes descend to near the inner periphery of the cylinder and draw off the water lodged there, on the principle of a syphon. The “exhausting “ pipe” is introduced through the above water pipe at one of the axes of the cylinder, and is connected to the exhausting trough in the interior of the cylinder. The exhausting trough should press against the upper inner surface of the cylinder and be made as near air-tight as possible by means of leather packings.

The third improvement “relates to the construction of the back “ or vessel intended to contain the pulp for the supply of the “ cistern.” Here the back is made in the form of a circular bottomed trough with flat ends, in which the cylinder is caused to revolve.

The fourth improvement relates to the process of concluding or taking the paper off the cylinder, and consists in substituting “a roller covered with several folds of woollen cloth, or con-“ structed so that the surface is moderately soft and elastic,” “in “ lieu of the brass roller hitherto used for that purpose.”

The fifth improvement consists in "the application of a well-known method of using an endless felt." "This felt is made to run round the couching roller, by the pressure of which the paper is caused to adhere to it," and is carried round with it, receiving two subsequent pressures between pressing rollers. The endless felt is kept tight by the weight of a roller and should be washed with water as it passes round the roller.

The sixth improvement relates "to the method of feeding." "The stuff, properly prepared and diluted with water, is delivered by one or more feed pipes into the back in such a manner that the orifice of the feed pipes is below the surface of the stuff in the back." The vat [containing the stuff] should be furnished "with a sluice" or other means for regulating the flow.

The last improvement consists in constructing the back "so as to enable the machine to make paper having two or more different colours in the same sheet." This is effected by dividing the back into several compartments open towards the cylinder, each of which is carefully supplied with the desired shade of pulp; or the back may be partitioned transversely, and the compartments supplied with suitable coloured pulp. As the cylinder in this case, revolves and passes these compartments it attracts layers of fibre of the different colours, thereby forming paper which may be white outside and blue in the interior.

[Printed, 10d. See *Repertory of Arts*, vol. 32 (*second series*), p. 1; *Rolls Chapel Reports*, 8th Report, p. 87.]

A.D. 1812, August 6.—Nº 3593.

HUBBALL, THOMAS, and KING, WILLIAM ROBERT WALE.— "A new and improved method of ornamenting articles, japanned, painted, or sized, whether made of paper, wood, or any metallic substance, as also leather, oil-cloths for tables or floors, and wainscot or plaster walls or partitions."

Such articles "intended to be ornamented are first painted, japanned, or sized in the usual way, and made smooth by rubbing with pummicestone powder with any sort of cloth, and then covered with a coat of gold size or any other glutinous liquid, such as is generally made use of for gilding, and which is put on with a hair brush, and allowed to remain until they are almost dry. Cut out of paper, parchment, or any other thin substance the pattern intended to be produced on such articles, and place it on them. Then rub such parts as are not covered

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“ with the paper in which the pattern is so cut out with a fine powder produced from iron ore, with leather, cotton, or other soft substance. Such patterns are then finished in the usual way of japan goods,” by varnishing and polishing. “ This powder is obtained from the iron ore,” in preference “ by pulverizing it in a mortar, after which it should be slackened “ by water, and then washed and stirred about, and the finer “ parts poured into a vessel, and then let stand to settle, after “ which the water should be poured off and the sediment dried.”

[Printed, 3d. See *Repertory of Arts*, vol. 23 (*second series*), p. 16.]

A.D. 1813, May 20.—Nº 3696.

COWPER, EDWARD.—“ Improvements on the machines commonly used for cutting the edges of paper and books.” By these improvements “ the knife or cutting instrument is made of steel, or iron and steel, or any other proper material; its cutting edge is indented. The inner side, that is, the side next the press, is as level as possible, but the outer side is bevelled towards the edge of the indentation or teeth in the same manner as a fleam. Two guides of iron or any other proper material guide the knife in its descent, and the pressure of the guides is regulated by screws.”

“ To use this machine, place the paper in a press, bringing the part to be cut under the knife, and screw down the press; raise the click of the ratchet wheel, and the knife will descend to the paper; turn the fly wheel, and the frame, and plate, and knife will move backward and forward.” [by means of a connecting rod and crank] “ the knife cutting the paper till it reaches the cutting board.”

[Printed, 6d. See *Repertory of Arts*, vol. 40 (*second series*), p. 220; *Rolls Chapel Reports*, 8th Report, p. 97.]

A.D. 1817, August 5.—Nº 4152.

DICKINSON, JOHN.—“ A method for manufacturing, by means of machinery, paper for copper-plate printing; also papers for writing, drawing, letter-press printing, and a thicker sort for boards, similar in texture and substance to card boards or paste boards; and certain improvements in my patent machinery for manufacturing and cutting paper.” The first part of this inven-

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tion "consists of a process similar to veneering in cabinet makers' work." "For this purpose there is first made a reel full of very thin paper, which requires to be reeled as wet as possible from the machine at which the paper is made. This reel of paper is suspended over a machine employed in making thicker paper, and while the latter is in a wet and pulpy state the end of the thin paper is laid upon it and conducted with it to the press rolls, which press the two papers together and unite them as one body." This invention relates, secondly, to "sizing," which may be effected by causing the sheet of paper when partially dried, while passing through the machine to press against one or two (as may be required) revolving sizing rollers. These sizing or furnishing rollers revolve in troughs of size, and thereby apply the size to one or both sides of the paper as may be desired. Thirdly, relates "to making a thicker sort of paper, similar in texture to paste boards or card boards, and consists in drawing off together two or more reels or lengths of paper," "drying the papers" over cylinders "and after covering [by means of the sizing rollers] all the surfaces, except those intended to be ultimately the outside of the card board, with glue," &c., "bringing them in contact [between pressing rollers] and pressing them together." The first improvement of the Patentee in machinery for manufacturing paper "consists in the addition of the second felt and second pair of press rolls." The second improvement "consists of an alteration of the internal apparatus of the paper-making cylinder and consists "in making the segment of a cylinder which is added to the internal apparatus for the purpose of regulating the rate of the water flowing through the cylinder [see John and George Dickinson, February 23, 1815], so long that the ends just touch the inside of each end of the heating cylinder, so that the two surfaces being turned smooth there may not be any friction, and yet very little water may pass into the interior of the cylinder by that joint;" and, also, that the surface of the internal segment be not concentric with the surface of the papermaking cylinder, but that it be the segment of a spiral instead of the segment of a cylinder," as shown in the drawing. "The next improvement in my patent machinery for making paper consists in the adoption of an intermediate air vessel [of large dimensions] between the paper-making cylinder and the air pumps, fitted up so as to exhibit and regulate the degree of suction."

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Under the second head of this Specification is described, first, a mode of actuating a swinging bar to and fro by means of a cam or tappet, the bar being in connection with a carriage containing the apparatus for drawing out the paper to be cut the suitable distance. The cutting knife, by this invention, does not rotate by mechanical means, but cuts in course of being drawn across the machine (by means of an eccentric) in consequence of its edge passing a steel straight edge which is at the time hard pressed down on the paper. Secondly, a mode of cutting longitudinally, which may be effected by means of circular knives, with intermediate metal rings, placed on two revolving spindles. The edges of the knives passing each other, cut the paper into long strips of suitable widths as it is drawn on by the revolution of the spindles. This process is more particularly adapted for thick papers. Transverse cutting may be effected by causing a similar cutting apparatus to move across the paper by means of an eccentric.

[Printed, 2s. 4d.]

A.D. 1817, November 28.—N° 4180.

BAISLER, FRANCIS.—“ Certain improvements on machinery “ used for cutting paper, which I intend to denominate Baisler’s “ patent paper plough.” The paper to be cut is placed in a frame and pressed by a moveable piece actuated by screws, which may be caused to act evenly and simultaneously by means of connecting wheels. “ On the opposite side of the frame is a slide that “ moves on a cylinder or between two parallel guides by means of “ a screw, lever, rack, and pinion, or other force. On the slide “ is placed one or more cutters, which may be set to any angle, so “ as to extend the full thickness of the paper or other substance “ intended to be cut; and by the movements of the screw or “ other force above mentioned, the cutter or cutters pass from “ one end to the other, performing the operation at once and “ with more facility than the common way, and perfectly parallel, “ which can seldom be obtained by the usual method. The press “ may be made either perpendicular or horizontal. To either “ method I attach a sliding board, which moves upon two parallel “ slides, by means of rack and pinion, screw, or other means of “ giving motion, and regulates the paper or other substance to be “ cut to any size with the utmost precision.”

[Printed, 3d. See Rolls Chapel Reports, 8th Report, p. 123.]

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A.D. 1818, April 16.—N° 4247.

CLAYTON, ROBERT.—“A new method of depositing or inserting certain metals or a mixture of metals in wood, ivory, bone, horn, paper, and pottery ware, whereby the old and tedious process of inlaying may be superseded, and the same effects be permanently produced in a shorter time and at a less expense than by any other process now in use.” “I introduce or insert certain metallic substances into wood, ivory, bone, horn, paper, and other materials, by excavating or indenting the design therein with knives, chisels, punches, sculpters, or gravers, and employing mixtures of the fusible metals to cast into and fill up such incisions.”

“The mixtures of metals which I use and prefer, consists of four parts of tin to one part of the regulus of antimony. When the metal gets sufficiently cooled and set into the design, I proceed to file, plane off, and polish away the extra surface metal, and afterwards embellish it with the graver if required.”

[Printed, 3d. See Rolls Chapel Reports, 7th Report, p. 120.]

A.D. 1824, May 20.—N° 4959.

DICKINSON, JOHN.—“Cutting cards by means of machinery, also a process for applying paste or other adhesive matter to paper, and for sticking paper together with paste or other adhesive matter, by means of machinery applicable to such purposes respectively.” The “cutting” is performed by circular revolving cutters, chisel edged, placed at regulated and corresponding distances on a pair of spindles; “the edges of the cutters on one spindle passing those on the other spindle about the eighth part of an inch, so that when the spindles revolve with sheets or slips of card board or paper placed between them, so as to be carried through, a cut is necessarily made where each pair of cutters come in contact.” The spaces between the cutters is filled by stops or blocks, and the cutters may be held tight in their places by spiral screws pressing against them, inserted in the blocks, or by wedges or other means. Plates of steel are caused to press on the filling in blocks, between the cutters, to prevent the cut paper from adhering to the cutters and to push it out.

The “pasting machinery.” “The ends of the paper [in a half dry state] are conducted under and through between two press rollers. Beneath these rolls there is a trough of paste, in which

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“ two rollers are made to revolve ; immediately over these two “ rolls are placed circular brushes, which are intended for pasting “ the under side of the paper as it leads under the two press rolls ; “ the two rolls are slightly fluted with very shallow circular grooves, “ and during the operation of the machinery the lower side is “ intended to be constantly immersed in paste or other strongly “ adhesive matter.” The paste rolls have an “ endway movement ” to assist in distributing the paste, and “ plates of brass ” are applied to regulate the supply. The pasted sides of the paper are brought together and pressed by rollers.

[Printed, 10d. See London Journal (*Newton's*), vol. 10, p. 354.]

A.D. 1825, June 21.—N° 5195.

BROOKES, PHILIP.—“ An improvement in the preparation “ of a certain composition, and the application thereof to the “ making of dies, moulds, or matrixes, smooth surfaces, and “ various other useful articles.” “ These improvements apply “ firstly, to the manufacturing and preparing of dies, moulds, “ matrixes, or stamps, of a certain combination of siliceous, “ argillaceous, calcareous, vitrescent, and barytic earths, or other “ natural earthy compounds, as granite, felspar, clays, marls, “ flint, cank stone, or any other material used by potters, which “ dies, moulds, matrixes or stamps, as aforesaid, undergo a “ certain degree of vitrification by heat, then to be used and “ applied for the purpose of embossing, by stamping or other- “ wise, representations or resemblances of figures, vases, buildings, “ ruins, and all other fancy and ornamental subjects, articles, “ matters, or things, in paper, leather, horn, Bristol board, mill- “ board, bone, tortoiseshell, ivory, imitation pearl, papier mâché, “ composition, cement, or paste.” “ In the second place, for “ manufacturing and preparing a certain combination of siliceous, “ argillaceous, &c., or any other material used by potters, into “ tabular plates with smooth surfaces, resembling tiles or slates, “ by means of mechanical pressure between metallic blocks, “ which artificial slates or tiles are to undergo a certain degree “ of vitrification by heat, and to be used and applied for the “ purpose of drawing, writing, printing, and painting upon “ with black lead, chalk, crayons, water-colours, oil-colours, or “ *any other material used by painters*; also, for manufacturing “ *and preparing by means of mechanical pressure between me-*

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" tallic blocks, and by the subsequent application of heat, slates  
" or tiles with smooth surfaces, vitreous or absorbent, with  
" enamelled surfaces of the above-mentioned materials used by  
" potters for the purpose of enamel painting, gilding, &c.; also,  
" for manufacturing and preparing of the last-mentioned materials  
" by means of mechanical pressure between metallic blocks, and  
" by the subsequent application of heat, smooth surfaces to be  
" used and applied either with or without a coating of glaze for  
" chimney pieces and all architectural purposes for which they  
" are adapted." (See Abridgments on these subjects.)

[Printed, 3d. See Loudon Journal (*Newton's*), vol. 11, p. 88.]

A.D. 1828, March 20.—Nº 5631.

COWPER, EDWARD.—"Improvements in cutting paper." These improvements relate to a machine the object of which "is to cut "the long web or sheet of paper made by the paper machine into "sheets of the ordinary sizes;" "in the direction of its length by "circular knives, and in the direction of its width by having "an indented or saw-toothed knife thrust through it;" and consist, firstly, "in the peculiar combination of the saw-toothed knife, "knife plate, pressing blocks, and pressing plates, and the mode "of producing the pressure by springs or weights while the sheet "is cut;" also, "the application of an expanding rigger to regulate "the size of a sheet of paper cut from the web made by the "paper machine;" and, lastly, "the mode of preventing the "accumulation or bagging of the web of paper, by raising the "roller or drum from which the paper descends while the transverse cut is made."

[Printed, 11d. See London Journal (*Newton's*), vol. 8 (second series), p. 20.]

A.D. 1828, May 13.—Nº 5655.

CROMPTON, THOMAS BONSOR.—"Improvements in that part "of the process of paper making which relates to the cutting." By this machine the paper may be wound on a roller and then caused to proceed in a continuous manner between two drawing rollers, between the circular cutters, and between other two drawing rollers, and be finally wound on a beam. The revolving cutters are circular blades, chisel edged, which intersect each other in the

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line of the paper. The axis of the lower blade is thrown a little forward to allow of the more ready delivery behind of the cut paper.

[Printed, 8d. See *Repertory of Arts*, vol. 8 (*third series*), p. 654; *London Journal (Newton's)*, vol. 4 (*second series*), p. 284; *Register of Arts and Sciences*, vol. 2 (*new series*), p. 343; *Engineers' and Mechanics' Encyclo-pædia*, vol. 2, p. 257.]

A.D. 1829, January 14.—N° 5754.

DICKINSON, JOHN.—“A new improvement in the method of manufacturing paper by machinery, and also a new method of cutting paper and other material into single sheets or pieces, by means of machinery.” These improvements consist, firstly, in “a mode” “of pressing out the water in the process of manufacturing paper,” which is effected by giving the last pressure between the pressing rollers with the “paper reversed, so that the different sides of the paper may come alternately next the [polished surface or] upper press roll,” whereby a gloss is communicated to the surface of the paper. This roller may be heated with steam. Secondly, “in a method of introducing into paper, cotton, flaxen or silken thread, web, lace, or other material adapted for the purpose, in the course of the manufacture by machinery, so that the said thread, lace, &c., may constitute the internal part of the paper.” The thread or lace, &c., is suitably placed in front of the paper making cylinder, and delivered on to the surface of the cylinder at the point desired. It passes round with the cylinder imbedded in the attracted pulp, and passes off under the couching roller in the usual way.

Thirdly, “in cutting paper by means of machinery.” The paper to be cut being unwound from a reel is placed on a table upon which are fixed any desired number of “steel cutters.” The cutters are straight, and parallel to the axis of the paper reel, and the paper is placed over the cutters. Above the table is placed a swinging frame, with a spindle at the bottom capable of turning easily, on which are fixed steel cutters corresponding with those on the table. As the frame is thrown across by an excentric, or otherwise, the paper is cut into as many portions as there are pairs of these cutters.

[Printed, 1s. 1d. See *Repertory of Arts*, vol. 8 (*third series*), p. 594; *London Journal (Newton's)*, vol. 9 (*second series*), p. 149; *Register of Arts and Sciences*, vol. 4 (*new series*), p. 9; *Engineers' and Mechanics' Encyclo-pædia*, vol. 2, p. 250.]

A.D. 1829, September 15.—N° 5849.

**COBB, THOMAS.**—“ Improvements in the manufacture of paper “ intended to be applied in the covering of walls or the hanging “ of rooms, and in the apparatus for effecting the same.” These improvements consist, first, in printing tinted paper during its manufacture, and before it is dry, by means of printing cylinders, one or both of which may be engraved, and supplied with suitable colouring matter, or by means of printing blocks.

Secondly, in giving to tinted paper a shining appearance “ re-“ sembling silk.” The paper may be twilled or ribbed by rollers during its manufacture, and when dried and sized, or otherwise, it is caused to pass between rollers, one or both of which are engraved with the required pattern; and one at least of them heated, “ so that the impression obtained may be stronger and more shining.”

Thirdly, two or more thicknesses of paper of the desired thickness, qualities and colours, may be united “ during the process of “ making, or afterwards” by introducing between them suitable “ glutinous substances.” Paper so formed may be passed through the embossing cylinders.

Fourthly, “ plain or figured silks, sattins, velvets, cottons, “ linens, or other fabrics,” may be united to paper by introducing “ any glutinous substance between them; and when so united, if the article is plain and wanted to be figured, “ I rib or twill it, “ and emboss it with any pattern required, as before described.” Fabrics so decorated are suitable for ornamenting walls. An effect called “ watering” may be produced by pressing and “ bruising” two thicknesses or pieces together between heated rollers.

Fifthly, in the apparatus for uniting the papers, or papers and fabrics together. This apparatus consists of a brush or roller revolving against a furnishing roller placed in a trough of size, which applies the size to the surface of the paper as it passes round a drum. The fabric is then brought in contact with the surface of the sized paper, and both proceed together under a pressing roller.

[Printed, &c. See *Repertory of Arts*, vol. 10 (*third series*), p. 38; *London Journal (Newton's)*, vol. 6 (*second series*), p. 288; *Rolls Chapel Reports*, 7th Report, p. 181.]

A.D. 1830, November 1.—N° 6025.

**AUBREY, LEWIS.**—“ Improvements in cutting paper.”  
*These consist in “the constructing of a cylinder having knives*

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" or cutters set on the surface thereof when acted on by a traversing carriage, and used for the purpose of cutting paper, and " also in the application of a circular saw or saws to the cutting of paper." The cutters to cut the paper crossway may be placed on the periphery of a revolving cylinder in a line or parallel with the axis. The distance of one knife from another gives the desired length of sheet; provision is therefore made for shifting a knife when required by means of a screw and nut working in a long slot, which will tighten up and fix the arm of the knife in any required position; circular boards are then fitted between the knives to ensure fixity. By an arrangement of pinion, wheels, levers, and cutters, the motion of this cylinder is arrested as each knife arrives under the paper, and at the same time a traversing endless linked chain is put in motion. To this chain is attached the "roller carriage," whereby it is drawn across the cylinder and over the paper, a roller carried by it revolving at the same time on the edge of the cutting knife cuts the paper transversely. The longitudinal cut is made by circular knives revolving at a high speed, and adjustable to any desired width of cut. The piece of paper as it proceeds from the reel is caused to pass over and is supported by bent pieces of metal, having longitudinal slits cut therein. The periphery of the revolving cutting saws or knives work into these slits, and thereby cut the paper into lengths as it passes forward to be cut by the transverse cutting cylinder already described.

[Printed, 10d. See London Journal (*Newton's*), vol. 8 (*conjoined series*), p. 360; Register of Arts and Sciences, vol. 8 (*new series*), p. 88.]

A.D. 1831, June 20.—N° 6125.

FOURDRINIER, EDWARD NEWMAN.—"Machine of an improved mode for cutting paper." In this machine several sheets of paper are drawn off reels by means of a drum, round which the paper is caused to pass on its way to the cutter. The paper is kept close to the drum by means of a travelling endless web of cloth. The drum receives an intermittent motion by means of a ratchet wheel and palls, which are actuated by a rod attached to an adjustable stud in a revolving face plate. The to-and-fro motion of the rod is transmitted to the ratchet wheel on the drum, through an oscillating segment rack suspended from its fulcrum, acting into a loose pinion placed on the axis of the drum. This

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pinion has an arm attached to it, extending to the periphery of the drum, with a pall on it, acting into the ratchet wheel fixed there. At each revolution of the face plate the drum and paper are caused to move round any required distance, and then to remain stationary during the time of cutting. The cutter consists of a fixed plate, over which the paper is brought, and a knife, which is caused to descend on it by means of a lever. "The knife or cutter is not " placed parallel to its axis, but at an angle thereto, and is curved " spirally to bring the edge to cut against the edge of the fixed " blade, there being an angle at all times formed by the edges of " the blades." "Before the knife begins to operate a fall board " is allowed to descend, by its own gravity, and press the paper " upon the bed during the time the knife is cutting."

[Printed, 1s. See London Journal (*Newton's*), vol. 1 (conjoined series), p. 273; Register of Arts and Sciences, vol. 7 (new series), p. 8; Engineers' and Mechanics' Encyclopaedia, vol. 3, p. 258; Rolls Chapel Reports, 7th Report, p. 136.]

A.D. 1832, February 23.—N° 6231.

DE LA RUE, THOMAS.—"Improvements in making or " manufacturing and ornamenting playing cards."

"This invention relates to that particular part of the operation " in the making or manufacturing of playing cards which has " heretofore been done in water colours by means of what is " called 'stencilling,' and which process is by this invention dis- " pensed with, and consists, first, in printing the colours of the " têtes or honors and pips of playing cards in colors mixed " with oil from raised surfaces, either in wood or metal or other " materials."

"Secondly, the printing the colours of the têtes or honors and " pips of playing cards from lithographic stones, when the colours " used for that purpose are mixed with oil; and,

"Thirdly, the ornamenting of the pipe and also the honors, " or, as they are technically called, the têtes, with gold, silver, or " other metals, or bronze, when such ornamenting is produced by " raised surfaces or lithographic printing, as above described; " but I lay no claim to the using of water colours, either in the " manner described or in conjunction with the manner described " for printing in oil colours."

[Printed, 4s. 5d. See Repertory of Arts, vol. 14 (third series), p. 287; London Journal (*Newton's*), vol. 2 (conjoined series), p. 60.]

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A.D. 1832, March 15.—Nº 6245.

TOWGOOD, MATHEW.—“ Improvements in cutting paper.”

These improvements relate to an apparatus “for advancing forward the paper to be cut the proper length of an intended sheet, and then keeping that paper motionless whilst it is cut off transversely by a moveable knife blade acting against a fixed blade.” The paper to be cut is passed over a measuring cylinder, to which is given an intermittent movement by means of a crank and connecting rod. Part of this connecting rod is weighted and covered with leather, and it acts frictionally in turning the measuring cylinder. The far end of the rod beyond the measuring cylinder rests on a supporting roller, and during one half of the revolution, or back stroke of the crank, the rod is lifted off the cylinder; and during the other half, or forward stroke, the rod is lowered on to the cylinder; and then, by means of the friction of the leather acting on the face of a ratchet wheel on the end of the measuring cylinder, it is caused to turn round the desired distance, this distance being regulated by the length of the crank. Suitable catches or clicks are caused to act in the teeth of the ratchet wheel, to prevent any tendency in the measuring cylinder to a retrograde movement. The “click” preferred is termed a quadruple click, that is to say, there are four clicks working in one centre, each rather shorter than the other, in order to subdivide the interval between the teeth of the ratchet wheel into smaller distances. These clicks, when not required to act, may be drawn back by a loop like a stirrup. The paper descends on the other side of the measuring cylinder in a perpendicular direction, where it is cut during each pause of the cylinder, in the usual manner, by means of a fixed and moveable knife.

[Printed, 1s. 3d. See Repertory of Arts, vol. 14 (*third series*), p. 204; London Journal (*Newton's*), vol. 12 (*conjoined series*), p. 271.]

A.D. 1834, August 15.—Nº 6663.

DE LA RUE, THOMAS.—“ An improvement or improvements in manufacturing or preparing embossed paper-hangings.”

These consist, “first, in preparing the back of embossed paper-hangings with spirit or oily substances suitable for resisting the moisture contained in the paste used for sticking such paper to walls of rooms, whereby such embossed paper-hangings will retain the sharpness and beauty of the embossing.”

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" Secondly, in the production of paper-hangings with embossed parallel lines in the way of the length of the paper, that is, in such manner that when the paper-hangings are pasted on to walls, such lines run upwards at right angles to the floor, and whereby an increased beauty of effect will be obtained from the light playing or acting on the surface of such paper."

[Printed, &c. See *Reportory of Arts*, vol. 4 (*new series*), p. 141; *London Journal (Newton's)*, vol. 8 (*conjoined series*), p. 166.]

A.D. 1835, August 17.—N° 6886.

BANKS, WILLIAM.—" Improvements in machinery, pens, and presses for ruling and pressing paper." The apparatus referred to consists of a machine for ruling on paper any desired number of lines at one time. The sheet of paper is caused to pass between rollers, one of which may be heated if desired, and over a travelling horizontal sheet of cloth. Under the sheet of cloth, and bearing up against it, is placed a roller, which affords the hard surface for the pens to act against. The pens are placed on a spindle across the paper, at regulated distances, and their points may be lowered to the paper by means of a lever handle. The pen used consists of a box to hold the ink, and a slit point projecting to rule with; between the ink box and spindle to which it is attached are springs which allow the pen to rise and fall perpendicularly.

[Printed, &c. See *London Journal (Newton's)*, vol. 18 (*conjoined series*), p. 80; *Rolls Chapel Reports*, 7th Report, p. 161.]

A.D. 1837, December 19.—N° 7515.

NICKELS, CHRISTOPHER, and COLLINS, HENRY GEORGE.—" Improvements in bookbinding, parts of which improvements are applicable to the cutting of paper for other purposes."

These relate, first, to " a machine for forming the backs of the books, instead of beating them round, as hitherto practised. Take the paper in the leaves or sheets, and square them loosely together on a flat surface by dropping them edgeways until they are all even; then drop them, with the back downwards in the machine, on to a hollow or any other suitable shaped bottom, such shape being made just the form or pattern the back of the book may be required. There is a contrivance similar to a parallel rule on each end of the frame, that shuts against any thickness of paper to keep it steady while being rounded, and a thumbscrew and nut to make the two end frames fast when set to the length of the book."

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Secondly, "relates to the application of a flexible or elastic cement to the purpose of combining the leaves of books one to another without stitching or sewing, such mode of cementing being cheaper, more expeditious in the process of binding the book, and better than the dissolved india-rubber heretofore employed." "The book is to be rounded at the back, either in sheets or in single leaves, in the machine which we have herein described. The book or the leaves constituting a book is or are then to be put into a press, leaving the back protruding, and a coat of the cement is to be laid on hot or rather warm upon the back and well rubbed in, that the back edges may be well saturated therewith; a piece of calico, or any other texture or fabric, is to have a coat of the same cement, and to be laid or pressed over it to confine all the leaves together. When dry (which in a warm room will be in a short time), the book is ready to be finished off in the usual way, according to design." Any suitable cement may be used for this purpose, provided gelatin is a constituent part, either incorporated with albumen or the mucilage of vegetables."

"The third part of this invention consists of a machine for cutting books or paper in quires." The book or paper to be cut is placed in a box, the bottom of which may be elevated or depressed by screws. The box is placed on a slide frame, and is pulled towards the cutter by the winding up of a cord attached to it. The knife or cutter is fixed to a parallel slide, and is caused to move transversely over the edge of the box by means of a revolving crank. Suitable screws are applied to the box to hold the book or paper whilst it is being cut.

"Paper or books so cut may be ornamented by gilding or staining before removing them from the box."

Fourthly, consists of "a machine for cutting paper to any length" and width.

The paper to be cut is fed between two revolving rollers, upon the upper one of which are placed the circular cutters or knives. "The knives are kept at any required distance by collars or washers, and all screwed up fast together with a screw and nut at the end of the shaft. The knives may work faster than the feeding rollers, and are provided for that object by the cog wheel, at the end of the shafts."

*[Printed, 8d. See Repertory of Arts, vol. 10 (new series), p. 283.]*

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A.D. 1840, January 21.—Nº 8353.

**WILSON, GEORGE.**—"An improved paper cutting machine." This invention consists in a machine "having a long straight " cutting blade [a chisel-edged knife fixed in a sliding frame], " caused to act upon the paper by direct vertical pressure, acting " in one direction only, or in two directions at the same time; " that is to say, through the body of the paper and across the " surface of the paper, which may be effected either by a straight " downward pressure of the cutting blade through the body of the " paper, or by such downward pressure, together with a separate " side motion, reciprocating or otherwise, across the surface of the " paper, given by cams or otherwise to the cutting blade, or by " causing the cutting blade to traverse the surface of the paper " while it receives the necessary downward or forward pressure to " force it obliquely through the body of the paper."

[Printed, 9d. See Repertory of Arts, vol. 14 (new series), p. 186; Practical Mechanics' Journal, vol. 2, p. 109; Inventors' Advocate, vol. 3, p. 67.]

A.D. 1840, March 30.—Nº 8458.

**MARTIN, HENRY.**—"Improvements in preparing surfaces of " paper." These improvements consist in "preparing surfaces of " paper by combining thereon a coating of oil paint with subse- " quent embossing; or with printing designs thereon for paper " hangings; or with subsequently glazing or planishing; and " also in the mode of producing a coating of oil paint on paper by " means of rollers." For this purpose, by preference, " I lay the " oil paint or colour on to the paper by passing the paper between " two rollers, together with an endless felt or other fabric. This " felt in its revolution is supplied with oil colour as it passes into " a trough and under a roller partly immersed in the oil, paint, or " colour therein, a scraper being placed to act upon the felt as it " ascends, to prevent it being too much charged with oil, paint, or " colour, and serving to keep the supply of colour regular. The " paper may be passed between the rollers in this manner two or " three times, according to the quantity of colour it may be " deemed necessary to lay on. By this mode of laying on the oil " paint I produce a fine and regular surface. Having obtained " paper coated with oil paint by the above or such like means, I " submit it when dry to the operation of embossing, by passing it " between properly engraved rollers, or I use dies, as is well

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“understood. In manufacturing paper-hangings, the paper having received its coating of oil paint of the colour the ground or surface is intended to be, it is next to be printed by blocks or other surfaces, as is now generally practised. When making paper-hangings in imitation of marble, I prefer to resort to that mode wherein the design is produced on a liquid, as is well understood, and I prefer to take the impression on to the painted surface of the paper before that painted surface is dry; by this means the effect will be improved, as it allows of softening off by a brush. For the purpose of producing the glazed or enamel-like surface,” “I lay the paper upon a woollen cloth, or cotton velvet, or other similar soft material, to form a firm but soft bed. I then take a pallet knife or a trowel having a good smooth or polished surface, and lay it flat on the painted surface of the paper, and pass it along with a slight pressure; the colour being set it yields to the pressure, and a glaze is thereby produced, or other means may be resorted to for glazing. When the surface is dry it may be heightened by the well known means used for glazing or planishing.”

[Printed, &c. See Repertory of Arts, vol. 16 (*new series*), p. 50; London Journal (*Newton's*), vol. 23 (*conjoined series*), p. 17; Mechanics' Magazine, vol. 33, p. 382; Inventors' Advocate, vol. 3, p. 229; Engineers' and Architects' Journal, vol. 3, p. 386, and vol. 6, pp. 305 and 400.]

A.D. 1841, September 4.—N° 9059.

WHITAKER, RICHARD.—“Improvements in cutting the edges of books, and paper for other purposes, and in impressing ornaments, letters, and figures on the binding of books and other surfaces.” The Patentee describes, first, a mode of holding the book fast while the back is to be operated upon. The book is placed back up on a platform “capable of being raised or lowered, in order to accommodate the same to the size of the book;” the movement being effected by a rack and pinion. The book, when properly placed, is held tight, and pressed on the sides by means of pressers set up by a screw or worm working through the toothed wheels into racks formed on the stems of the pressers.

The chase or frame is set up with ornamental typing, of the usual kind, in compartments formed by partitions, and held fast by suitable screws. The chase is furnished with a “heater box,” *into which a heater may be introduced*. The chase is worked by a lever attached to the heater box. One end of this lever is

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attached and drawn down by a rod attached to a rope and weight, which moves freely. When the other end of the lever is depressed the figures in the chase are brought down and into contact with the back of the book ; and by depressing it still further, the chase is caused to roll, as it were, over the back of the book, and thus make its impression. The rod referred to has a rack attached to it, into which a click works, which prevents that end of the lever from receding or lowering at the termination of a stroke, or when one impression is completed; by elevating, therefore, the hand end of the lever the chase is lifted clean off the back of the book.

The Patentee employs a "plough" for cutting books or paper, in which the improvement consists in the application of a dove-tailed slide, which fits into and moves freely to and fro in a "dove-tailed groove in the machine." The cutting blade is also supported by a "diagonal stay."

In order that the back of the book may be more equal and regular, for the better reception of the impressions from ornaments, &c., the Patentee "submits the back of the book, before [or after] applying the back binding, or what is called the lining, to the process of a roller press." The pressing roller, which may be heated, is placed in a rectangular frame, the side bars of which are formed into teeth, and is caused to slide backwards and forwards on the main frame, by means of a wheel working into the teeth.

[Printed, 2s. 9d. See Mechanics' Magazine, vol. 36, p. 253.]

A.D. 1841, October 7.—N<sup>o</sup> 9110.

INGRAM, THOMAS WELLS.—"Improvements in shears and other apparatus for cutting, cropping, and shearing certain substances." These improvements are designed for "shears and snuffers for cutting cloth, paper, &c., for snuffing candles and chopping rags, ropes, junk, &c.;" and "consist in so forming their blades, handles, and connecting joints, that in the act of cutting, one of the blades only with its handle shall be moveable," whilst the other blade with its handle remains relatively stationary." "The lower blade with its handle are formed in one piece, the under parts of which it may be desireable to make straight and coincident. The upper blade is alone moveable, working upon its fulcrum pin fixed in the hilt of the stationary blade. The handle by which this moveable blade is actuated

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" turns upon a fulcrum pin, also fixed in the hilt of the stationary blade, and the blade and handle are connected by a link and joint pins [or by other means] to the extremities of what may be called the shorter arms of these levers, that is the blade and handle." The cutting edge of the moveable blade may be made to press against that of the stationary blade by means of "an adjusting screw inserted into the back of the hilt of the fixed blade, which screw acts upon a small elastic plate or piece let into a groove in the [stationary] blade, and held by a dovetail at bottom," and is caused to press "with greater or less force against the back of the tail part of the [moveable] blade, and thereby force the cutting edge of the moveable blade against that of the stationary blade." Other modes of tightening the blades may be adopted.

The Patentee's mode of "cutting rags, &c." is effected by means; first, of an endless travelling or "creeping band," upon which the rags to be cut are placed, and which is caused to move forward in a regulated intermittent manner, by means of ratchet wheels and clicks, and deliver the rags between pressing rollers near to the cutting tool, between each movement of the ratchet wheels; and the presser, placed between these rollers and the cutter, is caused to descend on the rags, and hold them tight till the moving cutter has made its stroke. The perpendicular stroke of this cutter is effected at the moment when the feeding is at rest, by means of a crank on the main shaft. The back of the cutting frame extends downwards, and forms a guide to the moving cutter, at the back of which are screws to keep it in contact with the edge of the stationary cutter or ledger blade fixed to the bed of the machine. The rags may be fed into the cutters also by means of a pressing plate attached by a joint to the end of a lever, and working in a shallow trough, in which the rags are placed. The lever is actuated by a cam, and gives to the pressing plate an intermittent motion, which pushes forward the rags between the cutters.

[Printed, 2s. 8d. See London Journal (*Newton's*), vol. 21 (conjoined series), p. 486.]

A.D. 1842, December 3.—N<sup>o</sup> 9529.

**MANSELL, THOMAS.**—"Improved machinery for cutting or shaping leather, paper, linen, lastings, silks, and other fabrics."

*This improved machinery for cutting leather, paper, &c., consists of a press of the kind commonly called a "fly-press."* "To

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" the bolt of this press I affix by screws, or in any other convenient manner, a hollow tool, the edge of which is sharp, and of a shape corresponding to that of the pieces of leather, paper, linen, lastings, silk, or other fabric to be produced. On the bed of the press is fixed a plate of hardened steel. This plate is made flat by planing, and is carefully adjusted, so that when the hollow tool attached to the bolt of the press is brought down upon the plate, every part of the sharp edge of the former is in close contact with the latter. The leather or fabric to be cut is to be laid on the steel plate, and the tool being brought down upon it, cuts it to the required shape. Several thicknesses of leather or fabric may be laid together, and cut at the same time, and the press may either be worked by hand or machinery." In the drawings a mode is given for shaping the fronts of Wellington, Clarence, and Blucher boots.

[Printed, &c.]

A.D. 1843, December 18.—N° 0001.

COOK, BENJAMIN, Junior.—" Improvements in coating or covering the surfaces of metals of various forms, and of applying the same to a variety of useful purposes." "This invention consists in permanently coating or covering the surfaces of metallic articles of various shapes and forms with papier mâché, pasteboard, or some other similar material, so as to form an external surface for japanning, painting, or otherwise decorating the said articles. A thin sheet of metal is first fashioned, in any convenient manner, into the shape or form, or nearly so, of the article intended to be produced, and then covered over with a number of layers or thicknesses of papers or paper pulp in the manner usually adopted in making papier mâché articles." "The operation of japanning, painting, and decorating are to be conducted in precisely the same manner as when the articles are made entirely of papier mâché or of plate metal, as common tea boards, trays, dishes, &c. The articles to which I particularly intend to apply my invention are such as the following (viz.) :— Cornice poles, rings, and ends, curtain pins and bands, finger plates, window and other cornices, trays and waiters, chimney pieces, bread and other baskets, tea urns, plates, dishes, and tureens, dish covers, fenders, balustrades, bars, and bannister rails, portfolios, and other similar articles which are ordinarily

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" made of papier maché or metal." See invention of the Patentee for which a Patent was granted, A.D. 1842, May 23.

[Printed, 3d, London Journal (*Newton's*), vol. 24 (*conjoined series*), p. 428; Engineers' and Architects' Journal, vol. 7, p. 284.]

A.D. 1844, March 14.—Nº 10,103.

**STEPHENSON, FREDERICK.**—"Improvements in bookbinding, " and apparatus for cutting book and other folded paper, part of " which improvements are applicable to penholders." These improvements consist, first, "in the mode of binding printed " books by applying tortoiseshell and other similar shell and " horns." The shell being suitably bent to the shape of the back of the book, "is then to be dressed, and, if desired, inlaid or left " plain, polished, and whitewashed, and then glued or cemented " on to the back of the book. Second, in binding printed books " by applying the transparent properties of horn over ornamented " surfaces used in bookbinding." The thin and partially transparent sheet of horn may be pasted over the ornamental surface. Third, "in the mode of binding books by applying veneers of " wood." The veneers of wood may be attached to the millboard covers or backs of the books by means of glue. Fourthly, "in " combining a penholder and paper cutter in the same instru- " ment." The upper end of the penholder is made so that it will be capable of cutting paper. Fifthly, "in giving elasticity to " penholders by applying a screw spring." The part of the penholder which holds the pen is screwed into the handle, as it may be termed, of the penholder.

[Printed, 6d. See Repertory of Arts, vol. 5 (*enlarged series*), p. 16.]

A.D. 1844, June 12.—Nº 10,224.

**FARMER, THOMAS.**—"Improvements in the ornamenting of " papier maché, and in manufacturing and ornamenting japanned " goods generally." These improvements consist, first, in "orna- " menting papier maché and japanned goods by transferring to " the said articles, devices, or designs printed on paper," whether " from plates produced in the ordinary manner, or by "electrical " magnetic, or galvanic agency." "The parts of the gold or silver " leaf to be retained on the article to be ornamented are defended " by the oily composition first printed on [thin] paper, and " transferred from the said paper to the gold or silver leaf

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" surface." This composition is then removed by alcohol, or oil " of turpentine, or any other suitable solvent, and the design " may be finished by any of the methods or processes practised " by the Japanners."

Secondly, "in ornamenting of papier maché and Japanned " goods by metallic devices," &c., such devices, &c., being formed by "electrical, magnetic, or galvanic agency" on the article, or apart and afterwards attached thereto. The ornament to be produced is traced on the article to be ornamented with gold size and gilded in the usual manner. The surface is then immersed in a solution of copper (or other suitable metal) and the copper deposited on the gilded parts by means of the galvanic battery. The surface of the article is then wholly varnished over with Japanners' varnish and dried. When dry the surface is rubbed with pumice stone down till the copper is exposed. Fresh coating of copper is then deposited by similar means to the thickness of about one thirtieth of an inch. When this second coating has been embedded in, varnished, dried, and rubbed as before with pumice stone, the copper ornament so formed may be "silvered" or gilded or finished by engraving in any way best suited "to the designs." The metallic ornaments may be formed separately from the article to be ornamented by similar means to those described, and afterwards applied to the article by means of varnish, and the metallic surfaces of these ornaments may be finished as above described. The Patentee further proposes by means of depositing a coating of zinc (by electrical means) on the surface of the iron used for Japan work to prevent its corrosion, and to obviate the tendency of the Japan or varnish to detach itself from the iron.

Lastly, the Patentee's mode of producing designs in relief on papier maché may be effected by depositing or casting with copper the model, then varnishing thoroughly the copper surface with Japan varnish. Layers of paper or paper pulp are then introduced in sufficient thickness as in the ordinary manufacture of papier maché goods. The copper surface may then be removed by an acid or by galvanic, &c. means.

[Printed, &c.]

A.D. 1844, June 19.—N<sup>o</sup> 10,230.

WILSON, George. "Improvements in the cutting of paper for "the manufacture of envelopes, and for other purposes." In

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cutting a web of machine "made paper into suitable sheets, for the manufacture of envelopes, the paper has been divided or cut longitudinally, and the transverse cut dividing the paper into sheets has been heretofore performed at right angles to the longitudinal cut. In carrying out this invention the paper is to be cut longitudinally to obtain the proper widths of paper as heretofore, and in place of the transverse cut being made at right angles to the longitudinal cut, it is to incline thereto at such an angle as is required for the particular size or form of envelope to be made from the sheets of paper, and this may be accomplished by any suitable machinery or means for cutting paper without departing from my invention." "The machine preferred by me in carrying out my invention, which is of a well-known construction (commonly called Fourdrinier's patent cutting machine), but suitably arranged for making the transverse cut diagonally in place of being at right angles, and is also so arranged that the transverse knife or cutter may be adjusted to the diagonal cut required for the size of envelope to be made."

By Disclaimer dated A.D. 1844, December 18th, all that part of the title which is contained in the following words, "and for other purposes" is disclaimed.

[Printed, 1s. 4d. See London Journal (*Newton's*), vol. 26 (*conjoined series*), p. 30; Practical Mechanics' Journal, vol. 2, p. 171.]

A.D. 1844, December 12.—N° 10,436.

DE LA RUE, WARREN.—"Improvements in covering the surfaces of paper and other materials with colour and other substances."

The paper is caused to travel upon and along with an endless felt, the surface of which is covered with india-rubber or gutta percha, over a metal table or platform. Over this table are placed, in a frame, a series of brushes, for the purpose of applying the colour. A "cycloidal" or rotary motion is given to the frame of these brushes, by means of a combined crank movement, whereby the brushes are caused to distribute the colour more evenly over the face of the paper. The colour is supplied to the paper in a dried and powdered state, or in a liquid state, from an angular colour trough with suitable slits or holes in its under part. The colour, when in the liquid state, should be stirred by rods attached to a bar, to which a to-and-fro motion is given by means of a crank. The edges of the paper may be protected by means of strips of

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metal in the form of endless metal tapes, which move with the paper and are properly kept down to the paper and guided by rollers and guide pulleys. The supply of colour may be further regulated by more or less inclining the colour trough towards the paper. When the paper is in separate sheets it is fed by hand on to the endless blanket, and thereby carried forward under the colour brushes ; the proper progressing movement being secured by lowering a roller on the surface of the paper and pressing the ends of the sheets together. The elevating and depressing motion of this roller is effected by an adjustable cam and suitable levers. The colour, when in a fluid state, may be supplied to the surface of the paper carried by the endless web ; also by means of a series of furnishing rollers, which transmit the colour one to the other from the colour trough to the paper ; or by means of a revolving brush, acting on the furnishing roller and transferring the colour to the paper. When the colour to be applied is in the state of a powder, a shape may be communicated to the colour box, to assist the descent of the powder, by causing a revolving plate with inclined planes on its surface, to act on the end of the bar which carries the trough, at the other end of which is placed a spring which gives the return shake. Colour in the state of powder may be delivered from the trough through the slits already referred to, on to a revolving roller covered with felt, and be thus carried round on to the paper ; or the trough itself may be so made that a revolving roller forms, as it were, the bottom of the trough, and thus carries round sufficient colour. The Patentee proposes, lastly, to deprive of water the brushes which have been washed and cleansed, by attaching them to a cylinder, to which a high velocity may be given.

[Printed, 4s.]

A.D. 1845, March 17.—N° 10,565.

HILL, EDWIN, and DE LA RUE, WARREN.—“ Improvements  
“ in the manufacture of envelopes.” “ The object of the first part  
“ of this invention is to improve the machinery employed for cut-  
“ ing or shaping paper for making envelopes ; and of the second  
“ part in making up envelopes, by folding the flaps of properly  
“ shaped paper by machinery.” The cross head, which carries  
the angular cutters, is caused to move up and down by means of a  
crank and connecting rods, and after each downward stroke the  
table on which the paper is held is caused to revolve half round in

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order that the next descent of the cutters may cause the other two notches to be made in the paper. The rise and fall of the cross head and the descent and relative position of the cutters may be accurately guided and regulated by means of suitable slides and screws. The surface of the table upon which the cutters descend through many thicknesses of paper is circular, and covered with lead. The paper, already angularly cut, is placed between adjustable angular gauges fixed on the table, and is pressed down tightly and held on the table by means of an angular plate, somewhat smaller than the paper, attached to a "cross head" and bars, which is suitably actuated up and down, as required, and is also caused to rotate with the cutting table.

The cutter may be formed similarly to a punch, whereby an envelope may be wholly shaped by one cut. In this case the paper, in many thicknesses, may be placed on a traversing table, which is caused, by means of a screw, to move, at each stroke of the cutter, the requisite distance forward.

The machine for "folding over the flaps of envelopes," which have been previously cut to the proper shape, may consist of a moveable platform working in a recess, upon which the shaped envelope is placed. An apparatus called an inverted box is caused to descend and crease the paper and raise the flaps of the envelope out of the horizontal position, and this box is so constructed "that" "two of its sides go away [by means of cams], leaving the paper" "held down by the other two sides of the box, and then angular" "flaps or folding instruments fold the flaps of the envelope at" "those sides where the sides of the box have moved away, and the" "paper being held down at those sides by the folding instrument," "allows of the other sides of the inverted box going away, when" "two other folding instruments will fold the other two flaps of" "the envelope, the folding instruments working in such manner," "slightly in advance one of the other, that the angles or ends" "of the flaps of the envelopes will be successively folded over" "the preceding one, in the same manner as if each of the four" "flaps of an envelope had been folded by hand, one after the other." "The envelope having been folded by the machine, it is removed" "by suitable apparatus [a sliding bar having holding fingers," "covered with india-rubber], and a fresh piece of paper, of the" "proper form for an envelope, is fed into the machine." Other modes of holding the paper and folding the flaps may be adopted, so long as the principle of the Patentees' invention is adhered to.

*[Printed, &c. &c. See Practical Mechanics' Journal, vol. 2, p. 109.]*

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A.D. 1845, April 22.—N° 10,628.

**PERKINS, JOHN THOMAS.**—“ Improvements in machinery or “ apparatus for cutting paper and other fabrics.” These improvements consist in an arrangement of machinery, “ whereby I am “ enabled to actuate a horizontal saw blade or knife, and bring it “ gradually down through a pile of paper, pasteboard, paper and “ cloth, or other similar material, placed beneath it.” The pile of paper, &c., is placed on the bed of the machine and held tight there by a press-follower screwed down upon it. The cutter or horizontal saw blade, supported by guides and steadied by studs, receives a to-and-fro motion by means of a crank and rod, and pressure is given to the cutter by a weight communicating through two segments of racks working into vertical racks, from which vertical rods proceed and are jointed to the cutter. By another modification the upper standards, which carry the press-follower, may be jointed, so that it may be thrown back after the paper is cut in order that the edges may be gilt without removing the paper from the machine.

[Printed, 9d. See Mechanics' Magazine, vol. 51, p. 548; Practical Mechanics' Journal, vol. 3, pp. 266 and 263; Patent Journal, vol. 8, p. 199.]

A.D. 1845, October 9.—N° 10,866.

**MORGAN, EDMUND.**—“ An improved envelope for letters.” “ This improvement consists in the production of a novel form “ or shape cut out of paper, and afterwards folded up to constitute “ an envelope or receptacle for enclosing a note, letter, or small “ package.” A knife or tool being formed of the desired shape (see Drawing) is pressed through a number of sheets of paper by a suitable press, and thereby many pieces of paper are cut at one time of the shape claimed by the Patentee. When the flaps and ends of the cut paper are folded and gummed a complete envelope is the result.

[Printed, 6d. See London Journal (*Newton's*), vol. 28 (conjoined series), p. 315; Practical Mechanics' Journal, vol. 2, p. 169.]

A.D. 1845, November 11.—N° 10,935.

**BIELEFELD, CHARLES FREDERICK.**—“ Improvements in the “ manufacture of embossed or prepared paper, calico, leather, and “ other fabrics and articles.” This invention relates, first, to *embossing* by means of one or two rollers, heated or otherwise,

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having the desired design engraved upon them. The paper, fabric, leather, or other material or combination of them, alone or pasted on wood, are passed between the rollers for the purpose of producing moulds, &c. Secondly, "in using calico or other woven fabric with papier mache or other pulpy or plastic preparation of fibres, by which strength will be obtained by the woven fabric and substance." The pulpy preparation may be coated on the fibre or interposed between plies of the fabric, and, when sufficiently dried, embossed by suitable pressers. Thirdly, "in the use of india-rubber in combination with glycerine, glue, treacle [or gluten of wheat or other flour], when preparing a plastic matter from fibrous materials to be placed on or between paper, leather, or other fabric to be employed so as to obtain articles similar to papier mache, or for producing mouldings."

[Printed, 4d. See *Repertory of Arts*, vol. 7 (*enlarged series*), p. 352; *Patent Journal*, vol. 1, p. 63.]

A.D. 1846, October 15.—N<sup>o</sup> 11,417.

DONKIN, JOHN.—"Improvements in the manufacture of paper, or in the machinery employed therein, and in the process of bleaching paper, linen, and other manufactures in which chloride of lime is employed." By disclaimer dated 1847, March 22nd, the title of this patent is altered to "Improvements in the manufacture of paper, and in the process of bleaching linen and other manufactures in which chloride of lime is employed." This invention consists in "the application of bisulphite of soda in solution, to paper, pulp, linen, and other articles or materials which have been bleached by means of chloride of lime, so as to decompose and get rid of the chloride of lime which may be remaining mixed therewith or attached thereto." In practice the Patentee has found that "about a pound of the saturated solution of bisulphate of soda is sufficient for decomposing the chloride of lime in the pulp obtained from a hundred weight of rags, when the pulp has been well drained or pressed."

[Printed, 4d.]

A.D. 1846, December 15.—N<sup>o</sup> 11,495.

BINGLEY, MARK.—"Improvements in book binding and in weaving materials used in book binding; applicable also to other weavings; and in preparing for and making alphabets for

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“ accounts and other books, and in inking type therefor, and other “ purposes; and in preparing sprinkled, granulated, or mottled “ paper for bookbinders and others, applicable also to the edges of “ books, and in graining or chequering Russia and other leather.” These improvements consist, first, in applying metal strips or plates to form the back and the sides or lids of books, or partly of wood and partly of metal. Secondly, in weaving cloth to be applied to the backs of books, so that a head band may be woven into it, and thereby superseding the working in of the head band by the hand or otherwise. To effect this the Patentee finds it advantageous to use shuttles with springs applied of vulcanized india-rubber. Thirdly, relates to a mode of inking type set up in printing presses, by means of furnishing rollers, which are actuated separately from the mechanical operation of working the press. Fourthly, relates to an apparatus for “ sprinkling, granulating, and mottling,” and consists in causing a revolving brush to work against the surface of a colour feeding roller, and to throw the colour on to the edges of the book. The quantity of colour so thrown may be regulated by a plate pressing on the surface of the brush.

[Pri. d. 2s. 8d.]

A.D. 1846, December 21.—N° 11,512.

MYERS, GEORGE DAVID, COOPER, WILLIAM, and WANS-BROUGH, JAMES.—“ Improvements in the manufacture of caps, “ bonnets, book-covers, curtains and hangings, show cards or “ boards, labels, theatrical decorations, and coffins.” These improvements consist, “ first, in the manufacture of caps and bonnets by using flocked fabrics” on paper, or by flocking the cap or bonnet after it is shaped or formed.

“ Secondly, in the manufacture of book-covers, by applying the “ process of flocking and flocked fabrics.”

“ Thirdly, in the manufacture of curtains and hangings, and “ also theatrical decorations, by employing flocked fabrics of cotton “ or linen.”

“ Fourthly, in the manufacture of showcards or boards and “ labels by the application of the process of flocking.” The ornamental part may be first printed with suitable adhesive matter, and then flocked. The adhesive matter may then be applied to the ground, which may be flocked with a different colour.

“ Fifthly, in the application of the process of flocking and “ flocked fabrics in the manufacture of coffins.” The coffin may

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be covered with such flocked fabrics instead of with woollen cloth. The Patentees "use the ordinary means of applying flock to such purposes."

[Printed, 4d. See *Repertory of Arts*, vol. 10 (*enlarged series*), p. 249; *London Journal (Newton's)*, vol. 31 (*conjoined series*), p. 205; *Patent Journal*, vol. 3, p. 140.]

A.D. 1847, April 24.—N° 11,670.

JENNENS, THEODORE HYLA.—"An improved method or improved methods of manufacturing papier mâché articles; also a new or improved method of ornamenting papier mâché articles; which said method of ornamenting papier mâché articles is also applicable for ornamenting purposes generally." This invention consists first, "of a method of treating or preparing the 'panel' from which 'blanks' are made, and also of an improvement in constructing the moulds or dies in which the said 'panel' is formed into 'blanks.'" Steam is applied to the panel placed in a vessel "so as to render the same soft and pliable, in which said soft and pliable state the said 'panel' may either be pressed flat so as to make a stronger and more compact 'panel,' or moulded into any required form. The use of steam for softening 'panel' is applicable to 'panel' made either by pasting several sheets of paper together or from pulp, and to 'panel' made from unsized, as well as from sized paper and 'pulp.'"

"The moulds are made of such a form, that when separated from each other to a distance equal to the thickness of the 'blank' to be produced; the distance between all those parts of the said moulds which are opposed to each other shall be the same; the 'blank' produced by such moulds or dies will consequently be equally thick in every part."

The second part of this invention consists in "ornamenting papier mâché and other articles by the application of glass, gems, jewels, real or fictitious pearls, glass cut and 'quicked,' or otherwise, paste, enamel, coloured or marbled, wax, ivory, tortoiseshell, steel and other beads, and the glass beads commonly called pearl beads. I sometimes apply the said glass, gems, &c., to plates of glass, talc, or other suitable transparent substances; and afterwards insert the said plates of glass or talc as panels or tablets in the papier mâché or other articles. Or the glass, gems, &c. may be applied to the ornamenting of papier mâché and other articles, by inserting the said glass, gems, &c.

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" in the papier mâché itself. I sometimes insert the said glass,  
" gems, &c. before the papier mâché article is varnished, in  
" suitably formed cavities made in the papier mâché, and varnish  
" over the said papier mâché article and the inserted glass, gems  
" &c., and afterwards remove the varnish from the surface of the  
" glass, gems, &c., during the finishing of the surface of the  
" article; and I sometimes insert the said glass, gems, &c. in the  
" papier mâché articles after the same have been finished, save in  
" respect of the application of the said glass, gems, &c. In this  
" last case, the glass, gems, &c. are secured in properly shaped  
" cavities by any convenient varnish or cement."

[Printed, 2d. See Patent Journal, vol. 3, p. 529.]

A.D. 1847, November 6.—N° 11,948.

**BURSILL, GEORGE HENRY, and RADFORD, JOSEPH.**—"Im-  
" provements in envelopes, wrappers, and covers, and in machinery  
" and apparatus for the manufacture thereof."

These improvements consist, first, in making perforations or holes in an envelope so that the post-office stamp in stamping the envelope of the letter may mark through on to the letter itself, so that it may thus be identified as to date, &c.; or, part of the inside of the envelope may be prepared as for transfer or "car-  
" bonic" paper, so that the impression made by the post-office stamp will communicate through to the enclosed letter. The Patentee claims, secondly, "the mode of cutting out envelopes, " wrappers, and covers, by employing rotary cylinders having " suitable cutting apparatus applied thereto." The longitudinal cutting may be effected by a circular cutter fixed on a revolving cylinder, acting against a ring of lead surrounding another revolving cylinder placed under the first; both rollers being suitably supported, pressed together, and actuated in unison by means of toothed wheels. The holes in the envelopes referred to, or any additional proportions, may be struck out by means of a suitable punch fixed on the face of one of the rollers, working into a corresponding bed or bolster in the surface of the other roller. The transverse cuttings may be effected by inserting steel cutters of the desired form into one of the rollers, and into the other roller corresponding beds of lead. Other modes of cutting by rotating tools may be adopted, such as by substituting for the lead ring on the lower roller a steel cutter which will act against the

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cutter on the upper roller on the principle of rotary shears; or rotary steel or gun metal punches with corresponding beds may be substituted for the cutters and lead ring. "Embossing" may be made to form part in one operation with perforating and cutting the envelopes. For this purpose suitable dies may be sunk, or inserted by the aid of under cut grooves or otherwise in the surface of the gun metal casing of either of the rollers, with suitable beds for embossing placed in the opposite roller. The creasing may be performed by inserting slips of horn or of brass rule into suitably formed grooves on the surface of one of the rollers; and sinking grooves on the other roller adapted to receive such projections; such female grooves should be made of ample width and filled up with india-rubber.

[Printed, 2s. 3d.]

A.D. 1848, August 15.—Nº 12,243.

DE LA RUE, THOMAS.—"Improvements in producing ornamental surfaces to paper and other substances." These improvements consist "in producing iridescent films on to the surfaces of paper and other substances in order to produce colours thereon known as the colors of thin plates, or New-ton's rings." This may be effected by means of a "resinous varnish" or other suitable varnish or fluid or semi-fluid body "capable of yielding a thin film of solid matter," being dropped on the surface of still water or other fluid. The article to be coated being immersed in the water, and under the film floating on the surface, is then gently raised out of it, when the film will adhere to its surface, and when dry will present the colours referred to.

[Printed, 4d. See *Repertory of Arts*, vol. 13 (*enlarged series*), p. 316; *London Journal (Newton's)*, vol. 84 (*conjoined series*), p. 261; *Mechanics' Magazine*, vol. 50, p. 184; *Practical Mechanics' Journal*, vol. 2, p. 15; *Artizan*, vol. 7, p. 155; *Patent Journal*, vol. 6, p. 194.]

A.D. 1848, October 26.—Nº 12,298.

CHURCH, WILLIAM, and LEWIS, THOMAS.—"Improvements in machinery to be employed in making playing and other cards, and also other articles made wholly or in part of paper or paste-board, part or parts of which said machinery may be applied to other purposes where pressure is required." These improvements consist, first, in mechanism for "cutting sheets of paste-

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" board to the required size and form for playing or other cards;" "blanks for boxes and other purposes, such as gun waddings, &c.;" and also for "piercing or perforating the said cards," such as "button cards, &c." The pasteboard to be cut is caused to pass in a suitable number of thicknesses between two feeding rollers to which an intermittent motion is given by means of a cam acting on a ratchet wheel; the distance of each movement being regulated by an adjustable stop. The boards are thus carried forward under the punch bar and punches which are forced down and drawn up again at each revolution of a crank. The pasteboard thus pierced then passes forward between circular shears fitted on to rollers at regulated distances, and is cut into longitudinal strips; the ferrules between the cutters on the lower roller being grooved to prevent the closing of the perforations. These strips are then cut transversely as they advance by the descent of the upper cutting bar or knife actuated by a cam upon the stationary lower cutting bar, and finally discharged by two delivering rollers. The circular shears for making the longitudinal cuts may be replaced by straight shears, the upper blade being attached to and actuated by the punch bar; and the pasteboard may be fed in to the punches and cutters by a feeding bar attached to a slide provided with a number of clips. This slide is pushed forward by one end of a lever actuated by means of a cam.

Secondly, in mechanism for "pressing the pasteboard during the process of its manufacture." The platten or pressing portion of this apparatus is divided into two parts, but connected together by means of jointed levers. In setting down the press, two screws are employed for a certain distance of the stroke and then another screw is employed, which actuating toggle-jointed levers brings them more into a straight line and thereby presses down still further the lower part of the platten.

[Printed, 1<sup>st</sup>. Ed. See Mechanics' Magazine, vol. 50, p. 428; Artizan, vol. 7, p. 231; Patent Journal, vol. 7, p. 25.]

A.D. 1848, November 23.—N° 12,340.

**ARCHER, HENRY.**—"Improvements in facilitating the division of sheets or pieces of paper, parchment, or other similar substances."

"This invention is to enable persons when using postage stamps, tickets, or other small labels to separate one or more from a

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“ sheet without the employment of a cutting instrument. This improvement I effect by cutting or stamping around the margin of every stamp, ticket, or label a consecutive series of holes or slits, whereby the tearing up of the sheets of paper or parchment into pieces of uniform size will be greatly facilitated, while there will be sufficient adherence of the several stamps, tickets, or labels, which are printed on one sheet of paper or parchment, to ensure their retaining the form of a sheet until they are intentionally separated for use.” Any suitable mechanism may be employed for this purpose.

[Printed, 1s. See London Journal (*Newton's*), vol. 35 (*conjoined series*), p. 84; Mechanics' Magazine, vol. 60, p. 501; Practical Mechanics' Journal, vol. 5, p. 46; Patent Journal, vol. 7, p. 70.]

A.D. 1849, February 15.—N° 12,481.

ERWOOD, JOHN.—“ Improvements in the manufacture of paper ‘hangings.’ “ The paper to be operated upon, according to my invention is previously prepared with a coating of colour as a groundwork, the color used being suitable for the colors of the ground of the paper; the piece of paper so treated having been properly dried is then laid out on a board with the colored surface uppermost, and I proceed to give it a coating of the matter known in the trade as ‘satin white,’ or it may be ‘satin white’ mixed with a color. This is applied to the whole surface of the paper by means of brushes in the ordinary manner. I then proceed to delineate the marble on the moist or wet surface of the paper produced by the application of the ‘satin white,’ and by preference, putting in what is called the veining first, which is performed with the ordinary crayons, the colors of which are suitable to produce the veining required for the character of the marble. This veining is next softened off by the ordinary softening brush, in order to blend the color of the veining slightly with the groundwork or coating of ‘satin white,’ so as to break the harshness of the outline. The colors are then applied while the ‘satin white’ is still in a moist or damp state, introducing them with brushes in the ordinary way, in imitation of the kind of marble or porphyry to be represented. These colors are then smoothed down or subdued, and blended with the ground or coating of ‘satin white.’ ”

“ *I prepare the colors used in my new manufacture with a proportion of satin white, so that the colors shall also present*

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“ a surface capable of receiving the polish or gloss to be imparted  
“ to it.”

“ In manufacturing granite papers, according to my invention,  
“ I also employ paper previously prepared with a coating of color  
“ as a groundwork, which while in a dry state receives a coating  
“ of ‘satin white,’ colored or otherwise, it being laid out on a  
“ board as before described with reference to the marble paper.  
“ Whilst this coating is yet in a moist or damp state, I proceed  
“ to apply the coloring matter in imitation of granite, in the ordi-  
“ nary manner, by splashing or otherwise causing the color to  
“ adhere in spots to the ‘satin white.’”

“ The colors used in splashing, in imitation of granite, are also  
“ prepared with a proportion of ‘satin white.’”

“ Marble and granite papers prepared according to this inven-  
“ tion, after having been thoroughly dried are then subjected to  
“ the process known in the trade as rubbing, for the purpose of  
“ imparting the desired gloss or polish.”

[Printed, 3d. See Mechanics' Magazine, vol. 51, p. 189; Patent Journal,  
vol. 7, p. 204; Engineers' and Architects' Journal, vol. 12, p. 301.]

A.D. 1849, February 28.—Nº 12,493.

REMOND, AMÉDÉE FRANÇOIS.—“ Improvements in machinery  
“ for folding envelopes, and in the manufacture of envelopes.”  
The paper cut into the shape of envelopes is accurately placed in  
a pile on a platform, which may be elevated and depressed by a  
cam and lever. The feeding instrument consists of “two hollow  
“ fingers,” each having an opening on the under side, which com-  
municates by means of a flexible tube with an air pump. On ex-  
hausting the air one piece of paper adheres to the surface of the  
fingers. The fingers with the attached paper are then moved for-  
ward by means of a cam and lever rods, and deposits the paper over a rectangular recess or box with a perforated bottom. A rect-  
angular plunger is then caused to descend and carry down with  
it the paper into the recess or box, and thereby raise the four flaps  
into a perpendicular position. The plunger then moves away,  
leaving the paper in the box. The sides of the box are perforated  
with holes through which air is forced which causes the flaps to  
incline inwards. The plunger is again brought down and com-  
pletes the folding. The flaps being moved in succession, so  
that one will lay over the other, by means of “inner projections”

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on the plunger suitably placed. The bottom of the box being hinged at one end may be allowed to open by means of a cam and lever, and drop the folded envelopes.

In order to "supply gum or cementing fluid to the undermost flap," a fountain or supply of gum is so placed that when the paper is carried, by the fingers referred to, over the recess box, the undermost flap will be over the supply of gum. A presser is then caused to descend, previously to the plunger, and press the paper against the gummy surface. The outermost flap may at the same moment be embossed by suitable dies, the upper die being actuated by a cam; and colour may be supplied to the lower die by means of a colour roller.

[Printed, 1s. 9d. See *Repertory of Arts*, vol. 14 (*enlarged series*), p. 221; *Mechanics' Magazine*, vol. 51, p. 212; *Practical Mechanics' Journal*, vol. 2, p. 169, and vol. 3, p. 229; *Patent Journal*, vol. 7, p. 226.]

A.D. 1849, November 17.—N° 12,850.

BRINDLEY, WILLIAM.—"Improvements in producing ornamental designs on papier maché, and in preserving vegetable matters." "To produce ornamental surfaces in papier maché, I cause sheets of paper in the wet state as they come from the sieve to be accumulated one on the other to the thickness desired, as is well understood in making button board and also articles for japanners; but in place of causing these series of sheets to be pressed, I at once place them on the oiled pattern surface, whether sunk or in relief, and I then subject the papier maché and the pattern to pressure, first, however, applying a sheet of waterproof paper (oiled paper) on the upper surface, and then four or five sheets of paper from the sieve on to that waterproof paper. I then press the pattern surface and the wet paper together in a press, after which I cause the whole to be clamped together and placed in a stove, as is well understood in making like articles of papier maché, and the object of using the wet sheets of paper before pressing is that they may take more sharp impressions, and that materials such as leaves and flowers of plants and trees may be used as the pattern surfaces or parts of the pattern surfaces, which being very delicate would not admit of the green paper being used after having been pressed. In making up a pattern surface, I generally employ panel board, but other material may be used; and I place or affix leaves or flowers or other matters thereon to

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" produce the pattern surface, such matters being all oiled, and  
" then on them I lay the accumulation of green wet impressed  
" paper, and then, as above described, I subject them to pressure  
" and stovings, by which I obtain an ornamental pattern in  
" reverse, and which may be used in that state by japanners or  
" others, or it may be used as a mould or die for obtaining papier  
" maché or impressions therefrom."

" The second part of my invention consists of preserving leaves  
" and flowers, and stalks of plants by subjecting them to oil and  
" stoving in like manner to what papier maché is done for this  
" purpose."

[Printed, 3d. See *Repertory of Arts*, vol. 15 (*enlarged series*), p. 381;  
*London Journal (Newton's)*, vol. 38 (*conjoined series*), 316; *Mechanics' Magazine*, vol. 52, p. 417; *Patent Journal*, vol. 9, p. 119.]

A.D. 1849, November 17.—N° 12,853.

WORDSELL, THOMAS.—“ Improvements in the manufacture of  
“ envelopes and cases, and in the tools and machinery used  
“ therein.” These improvements consist, first, in cutting out the  
envelope from a sheet of paper by means of a “ ram.” The ram is  
caused to descend upon the sheet of paper, placed over a rectangular  
recess in a table, and, by means of suitable knives attached to it,  
to cut the paper into the desired form, and afterwards to depress it  
into the recess and discharge the envelope thus roughly shaped out  
at the bottom into a receiving tray. Secondly, in performing, by  
“ one continuous operation of one machine,” the four processes  
“ of stamping, gumming, creasing, and adhesive composition  
“ applying processes.” This may be effected by combining the  
necessary apparatus for the purpose. The stamp is depressed by  
means of a cam, and the mouths of the gumming vessels are  
brought down simultaneously upon the edges of the two end flaps,  
and supply them with gum. The centre plate of the ram next  
comes in contact with the centre of the piece of paper, and presses  
it down through the recess and between the creasing plates, as before  
described. In process of doing so the inner side of the seal flap  
is caused to slide against the surface of a sponge charged with gum,  
supplied from an oscillating vessel. The centre plate is so grooved  
out as to prevent its coming in contact with the gummed edges of  
the paper. The paper, roughly creased, may be deposited by the  
centre plate on a platform underneath, and detained there by the

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pressure of the four creases, and when the plate has so far receded as to be above the highest points of the upright sides of the paper, the platform is made to fly up by means of a spring, and press the edges of the paper against the bottom edges of the four creasing plates, which serves still further to impress the paper into the required form. The platform is then allowed to drop into an inclined position, and the envelope slides into a trough, and thence between rollers, the upper one being shorter than the lower one, "to allow the seal flap to pass without being flattened," which press "the remaining three sides" and cement them together. Upon emerging from the rollers, the envelope descends, by its own weight, on to a "circular revolving receiver," carrying two semi-circular trays, to which a slow intermittent rotary motion is given by a ratchet wheel, lever, and pall. As a tray is filled it is removed to a suitable place for drying the envelopes, and replaced by another. The Patentee further points out modifications in his arrangements whereby, however, the principle of this invention is adhered to.

[Printed 1s. 11d. See Mechanics' Magazine, vol. 52, pp. 415 and 421; Patent Journal, vol. 9, p. 104.]

A.D. 1849, December 19.—N° 12,904.

DE LA RUE, WARREN.—"Improvements in the manufacture of envelopes."

These improvements consist, first, in the "means of applying "gum or adhesive cement to the flaps of envelopes during the "process of folding, so as to cause flaps of each envelope to adhere "together, according to the order or succession in which they are "folded." The gum may be applied to the edges of the envelopes by means of a brush or other instrument, suitably actuated, and which supplies itself with gum from a tearing surface or endless sieve, supplied with colour in the usual manner. The envelopes being so gummed, and the folding process completed, they are delivered, one under the other, by means of a revolving endless cloth, between rollers, and pressed flat, and thence they are accumulated in a pile between guide plates.

Secondly, in the "means of subjecting envelopes (after the flaps "have been gummed) to pressure between [two flat] surfaces, so "as more certainly to ensure the holding of the cement." "The "moveable platform [plunger] on which the folding takes place, "in place of being arranged to deliver the folded envelopes by "rising upwards (as described in Hill and De la Rue's specifica-

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"tion, A.D. 1845, N° 10,565), is caused to descend, so that the "envelope may descend with it and fall on to an endless apron "moving constantly under the platform." In process of doing so, and after the gum has been applied by suitable means, a "flap "the size of the envelope is caused to press the folded envelope against the "moveable platform."

Thirdly, in causing "properly cut pieces of paper, fed into "machinery, to have what may be called the 'seal flaps' thereof "coated with gum or cement, and then be dried before being "folded; also the arrangement of transmitting apparatus employed "between process and process; likewise, when desired, impressing "or embossing apparatus." The paper, properly cut, may be fed by hand, or the paper may be placed in a pile on a table, moveable up and down as required, and be fed towards the gumming apparatus by means of a moveable friction surface, which being made to push along, causes the upper piece of paper to be滑ed forward. The paper so fed is carried forward in an intermittent manner and held tight by means of two travelling endless bands, in such a position that gum may be applied to the seal flaps only, by means of a gum surface or brush properly actuated. The gum brush or surface is caused to supply itself with gum by suitable means from a revolving sieve. The envelopes so gummed press on between these endless bands, and are delivered on to another travelling band, being assisted in passing from one to the other by a revolving brush. This second travelling band is caused to move slower than the previous bands, so that the envelopes will be caused to overlap each other to a certain extent, leaving, however, the part gummed uncovered. This endless band, with the assistance of a pair of travelling straps or felts, moving in contact with it (which prevent pieces of paper from moving out of their places), carry the paper forward and into a suitable drying apparatus. When dry they are stopped by a stop, formed into a pile, and taken to be folded. The paper may be embossed at the same time by interposing and properly actuating an ordinary stamping apparatus, placed between the pile of paper and the gumming apparatus.

[Printed, 12s. 6d. See Mechanics' Magazine, vol. 52, p. 517; Patent Journal vol. 9, p. 184.]

A.D. 1850, January 31.—N° 12,956.

BURY, THOMAS, and RAMSDEN, NATHAN.—"Improvements "in machines for glazing, embossing, and finishing woven fabrics

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“ and paper.” These improvements apply particularly to “ machines for glazing, embossing, and finishing calicoes, muslins, “ woven or printed fabrics, and paper,” and consist in “ the arrangement and application of two or more friction bowls, “ rollers or cylinders, made of iron, or any metal or material “ suitable for the purpose, acting in conjunction with one principal bowl or roller made of paper, or any other suitable material, “ instead of the arrangement of one friction bowl, roller, or “ cylinder, as used in the ordinary machines now in use. This machine is equally applicable to the aforesaid purposes if inverted; a greater amount of pressure is thus gained, by forcing the principal or paper bowl on and between the two friction bowls, instead of the two friction bowls being forced upon the principal or paper bowl; and this arrangement also renders practicable the working of two pieces of cloth, fabric, or paper, with the same facility as one. A drag or retarding roller may be caused to press upon the principal or paper bowl, which will produce an increased glaze or finish on the fabric or paper.”

[Printed, 8d. See Mechanics’ Magazine, vol. 53, p. 117; Patent Journal, vol. 9, p. 9.]

A.D. 1850, March 7.—N° 12,994.

CHURCH, WILLIAM.—“ Improvements in machinery or apparatus to be employed in manufacturing cards and other articles composed wholly or in part of paper or pasteboard; part or parts of the said machinery being applicable to printing the same, and parts to other purposes where pressure is required.” These improvements consist, first, in apparatus for “ gradually elongating the leverage for working the force pump of hydraulic presses used in the manufacture of pasteboard, as well as for other purposes.” To the upper side of the pump lever is attached a rack into which a pinion works, actuated by a ratchet wheel with click and tumbler; at each stroke of the lever the ratchet wheel moves a tooth, and causes the lever to slide, whereby the leverage will be gradually lengthened. The lever passes through a slot in the pump rod, and is supported by a small rocking frame.

Secondly, “ in arrangements of machinery for cutting up pasteboard to form railway tickets and other cards.” The sheet of pasteboard is cut longitudinally by circular knives suitably placed upon the axis of two rollers revolving together, which draw in the

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board as they cut and discharge it in strips on a lower table. Two bars are caused to descend on the strips so placed, by means of a cam and lever movement, and keep them straight by their pressure. At the side of this table, and at right angles to the first pair of cutters, are placed a second pair of cutters, towards and between which the strips are moved transversely by means of two pins projecting up through suitable slits in the table, and to which a transverse motion is given by means of two endless chains placed immediately beneath the table, and suitably actuated. The knives are annular pieces of steel with bevelled cutting edges. To one of each pair of the cutting rollers a lateral movement may be given for the better setting of the knives.

Thirdly. If the pasteboard is intended to be cut for boxes, a blunt edged indenting instrument, to mark the folds, is caused to press with force against the pasteboard, as it passes between the first and second pairs of cutters. The adjusting washers or fittings between the cutters, upon which the pasteboard rests, to resist the pressure of the indenting tool, are made nearly equal to the diameter of the knives.

Fourthly. "In arrangements of machinery for effecting the printing, numbering, and cutting of railway tickets, or other cards, simultaneously." This apparatus consists in combining in one machine the different known parts required to effect the various desired objects, and in applying thereto the necessary cam and lever movements to actuate the whole in harmony.

Fifthly. "Relates to the dating of railway tickets," and may be effected by elevating the chase holding the figures, by means of a crank movement, up to the platten, the ticket being interposed. The figures are supplied with ink by means of furnishing rollers suitably actuated. A counting or registering apparatus may be applied.

Sixthly. Relates to an "arrangement of apparatus for numbering the pages of account and other books;" which is effected by a lever carrying down upon the paper the printing apparatus upon which the figures to be printed are raised.

[Printed, &c. See Mechanics' Magazine, vol. 53, p. 217; Patent Journal, vol. 9, p. 281.]

A.D. 1850, March 7.—N° 12,998.

DE WITTE, GERARD JOHN.—"Improvements in machinery, apparatus, metallic, and other substances, for the purposes of letterpress and other printing."

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This invention consists, "first, in the combination of machinery or apparatus for the purpose of manufacturing cylindrical, stereotype, 'clichage cylindrique,' by which newspapers, journals, or other works or papers are printed on both sides at once by a continuous movement, and cut and folded when required.

"Secondly, the printing of painted papers, and woven and other fabrics, by a similar continuous movement, by or with the use of cylindrical stereotype (clichage cylindrique)." "The impression or printing is effected by means of portions of metal, cylindrical rings, or rings in relief, placed on cast iron or other cylinders, of which there may be several arranged in succession." Such rings may be made of other suitable hard material, on the surface of which is placed the pattern to be printed. The colour is supplied to the printing surface from a colour "hopper," by means of intermediate gelatine rollers covered with vulcanized india-rubber. Between the pressing "screws and cushions" are placed a plate or band of vulcanized india rubber, which serves as a spring.

[Printed, 2s. 11d. See Mechanics' Magazine, vol. 53, p. 215; Patent Journal, vol. 9, p. 185.]

A.D. 1850, March 19.—N° 13,007.

EDMONDSON, THOMAS.—"Improvements in the manufacture of railway and other tickets, and in machinery for marking railway and other tickets." This invention consists, first, in substituting a "woven fabric," which may be in narrow bands, for the paper and pasteboard usually employed in making railway and other tickets. The fabric may be suitably stiffened and glazed.

Secondly, "in machinery for giving the required motion to the sliding block of the receiving tubes," whereby it will be lowered in proportion to the accumulation of the tickets. This may be effected by a long click acting into a ratchet wheel attached to a pinion which suitably actuates a rack fixed to the back plate of the block. Springs are applied to prevent the descent of the block from its own gravity.

Thirdly, relates to an arrangement of apparatus "for marking and numbering in a continuous manner railway and other tickets." The blank tickets are piled in a tube, and the undermost ticket is pushed forward on to a table by means of a slide actuated by an eccentric and lever. At the second stroke of the slide the second ticket is pushed forward, which causes the first to advance so far as to bring it between two rollers, upon the peri-

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phery of the upper one being placed the types. The revolution of these rollers causes the ticket to be printed and passed forward again on to the table. The tickets there successively push each other forward till the first comes over a presser, the upward motion of which forces that ticket, and that portion of the inking ribbon immediately over it, against the numbering wheels, the figures on which are marked on the ticket. At the next revolution of the driving shaft the first ticket is deposited in the receiving tube. The mode of inking the type and the operation of the numbering apparatus have been described by the Patentee in a former specification; or the ink may be supplied to the type and to the numbering wheels by rollers suitably actuated first against colour rubbing plates supplied with ink and then forward and over the type.

Lastly, relates "to stamping the requisite inscription and date "on railway and other tickets, thereby dispensing with ink, and "producing a more indeible impression." This may be effected by removing from the apparatus already described the inking portion, and making the type and numbering wheels of hard steel or other suitable metal. Or for stamping the date of issue on the ticket, the types or figures may be made of steel, and the ticket being inserted in the usual way into the stamping apparatus the swing frames are forced back and the type brought down, when an indeible impression will be made.

[Printed, 1s. 3d. See Mechanics' Magazine, vol. 53, p. 255; Patent Journal, vol. 9, p. 293.]

A.D. 1850, April 5.—N° 13,032.

GOODALL, JONATHAN CHARLES.—"Improvements in machinery for cutting paper." "According to this invention the knife or cutting edge is fixed, whilst the table on which the paper to be cut is placed is moveable." The pile of paper being placed accurately on the table and held tight and pressed by a bar, the whole is elevated by suitable means against the fixed knife. The Patentee prefers "gutta percha" as the substance on the table for the knife to come in contact with, after passing through the paper, and prefers the point of the cutting edge of the knife to be "ground hollow" on a stone about three feet in diameter.

[Printed, 1s. 3d. See Repertory of Arts, vol. 17 (enlarged series), p. 32; Mechanics' Magazine, vol. 53, p. 299; Patent Journal, vol. 10, p. 44.]

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A.D. 1850, April 15.—N<sup>o</sup> 13,036.

**REMOND, AMEDEE FRANCOIS.**—“Improvements in the manufacture of envelopes.” These improvements refer to “the applying cement or adhesive matter [in a dry state] to the flaps of envelopes and in moving the envelope paper from one part of the machinery to another (by atmospheric pressure), after the same has had cement or adhesive matter applied.” The paper to be operated upon is first cut into the form of the envelope and placed on a sliding table. Over the paper is placed a slide properly actuated, to which is attached the vessel containing the water to moisten the flaps with, and a box containing gum in a dry powdered state. When the flaps are moistened the gum box is caused to dust the gum on the parts so moistened, and then a hollow instrument or sliding tube with apertures underneath and connected by a flexible tube to a bellows or pump is brought over the paper so gummed. The partial vacuum so formed causes one envelope to adhere to the tube, which then is caused to convey it on to another table, whence it is taken to be dried.

[Printed, 1s. 9d. See Mechanics' Magazine, vol. 53, p. 318; Patent Journal, vol. 10, p. 29.]

A.D. 1850, July 17.—N<sup>o</sup> 13,175.

**SMITH, EDWARD N.**—“Machinery for folding sheets of paper or various other matters or substances capable of being folded thereby.” This invention consists of a combined arrangement of mechanical parts forming an automatic machine for folding sheets of paper. The sheets of paper may be placed on a supporting surface, consisting of a series of endless bands, made to run round suitable drums. A knife edge blade, or thin strip of metal or other proper material is then caused to move suddenly upwards between two of the endless bands, and directly under the centre of the sheet of paper, and carry it upwards till the paper so folded is caught between two rollers, and then to recede under the bands. These rollers are also supplied with endless bands which guide the paper forward, first in a perpendicular and then in a horizontal direction. The bands surrounding one of the rollers move further than the other in the horizontal direction, conveying the once folded paper with them, and thus form another supporting surface, under which is another knife edge blade, which on rising up

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between the bands as the first blade did, folds the paper a second time, but in a transverse direction. The paper so folded may be again caught by another pair of rollers, also provided with endless bands, and so carried forward, and again folded as before.

[Printed, 1<sup>o</sup>. See Mechanics' Magazine, vol. 54, p. 78; Patent Journal, vol. 10, p. 261.]

A.D. 1850, July 22.—N<sup>o</sup> 13,183.

**BESSEMER, HENRY.**—"Improvements in figuring and ornamenting surfaces, and in the blocks, plates, rollers, implements, and machinery employed therein." This invention consists, "first, in the improved method of figuring and ornamenting surfaces, that is to say, in so far as regards the doing over of the engraved block or plate with bronze or other dry powder, and then placing the same in a heated state upon the surface to be figured or ornamented, the latter having been previously prepared for the purpose, by a thin coating of glair or other like substance, or containing in its composition a sufficiency of (adhesive matter resulting from dressing or otherwise) to render such coating unnecessary."

"Secondly, in the use of two blocks, or the double operation of printing and pressing, for producing bright metallic impressions on book covers, and other surfaces, without injuring those parts of the surface uncovered by the design." This is effected by two blocks, one of which is an electrotype copy of the ornamenting block with the highly polished surface; the first applies the size, and the second gives the brilliancy to the impression. In this case the bronze is applied in the usual manner.

"Thirdly, in the ornamenting of woven fabrics by placing them in contact with some other fabric, which is moistened all over with adhesive matter, and which upon pressure being applied, supplies the parts pressed with as much moisture as will cause the metallic powders to adhere."

"Fourthly, in the admixture of gum resins with bronze powders, to be used in a dry state, for ornamenting and figuring surfaces." The resins melt by means of the hot impressing block, and attach the bronze powders more firmly to the fabric.

"Fifthly, in the employment, for figuring and ornamenting surfaces, of the compound of gamboge and bronze powder." This

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compound should be applied to books and papers while in the press (as is now the practice in edge gilding), and afterwards burnished; or the same composition may be used as a paint or marking fluid.

“Sixthly, in the method of producing blocks, plates, or rollers of “malleable cast iron,” “for impressing designs in bronze powder “on book covers and other surfaces.” A block, plate, or roller, having the outline of the pattern cut upon it, is moulded in sand and then cast in “malleable cast iron;” the face of the casting is then ground and polished, and the engraving completed by the engraver. It is next to be heated to redness, and case hardened in the usual manner.

“Seventhly, the method of removing the superfluous bronze “powder from the surfaces of blocks or rollers used for ornamenting surfaces, by tapping and striking.”

The bronze powders may also be applied by heated rollers, upon which the design is engraved in relief.

[Printed, 4d. See Mechanics' Magazine, vol. 54, pp. 77 and 88; Patent Journal, vol. 10, pp. 251.]

A.D. 1850, November 17.—N° 13,315.

BLACK, JAMES.—“A machine for folding.” “This invention “has reference to the folding by machinery of paper, cloth, and “other like fabrics.” The sheet of paper to be folded is properly placed as to registering on a box or table, having a long slot in its upper surface; the sides of the slot are continued downwards in the box, thereby forming a narrow chamber. The folding blade, jointed at one end, and having a serrated edge in preference, is then caused to descend on the paper, and enter the narrow chamber, through the slot, carrying down with it the paper, which it thus folds. The blade then recedes, by means of a spring or counter weight, leaving the folded paper in the narrow chamber. A second folding blade is then caused to strike the paper cross ways and carry it through another slot into another narrow chamber situated in the side of the first chamber, to leave it there, and recede, thereby folding the paper a second time. This mode of folding may be repeated several times. The throw of the last folder used, brings the folded paper within the action of a pair of rollers, which catch it between them and deliver it forward between

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a second pair of rollers, where a considerable degree of pressure may be given by means of regulating screws.

[Printed, 10d. See Mechanics' Magazine, vol. 54, p. 396; and vol. 55, p. 101.]

A.D. 1850, December 7.—Nº 13,393.

VOYEZ, GEORGE HENRY.—“ Improvements in the manufacture “ of paper-hangings.” These consist in “ the manufacture of “ paper-hangings printed in such manner that they require to be “ hung horizontally. By having the paper so printed, a piece of “ paper may have the pattern repeated several times in its length, “ but the repetitions of the pattern, in place of being one under the “ other in the lengthway of the paper, will have their vertical or “ upright positions across the paper or in a transverse direction, “ by which means several pieces of paper, having a common “ ground or general design, but differing in the principal object or “ objects of the design, may be hung horizontally one above the “ other from the floor of a room upwards; and in place of the “ same design being repeated in a vertical line many times, all “ repetition upwards may be avoided, if desired, or only seldom “ repeated, and different subjects of design may succeed each “ other in a vertical direction.”

[Printed, 2d. See Repertory of Arts, vol. 18 (*enlarged series*), p. 38; Mechanics' Magazine, vol. 54, p. 478; Patent Journal, vol. 11, p. 138.]

A.D. 1851, January 16.—Nº 13,453.

BUCHHOLZ, GUSTAV ADOLPH.—“ Improvements in printing, “ and in the manufacture of printing apparatus, and also in “ folding and cutting apparatus.” These improvements consist, first, in making printing rollers of gutta percha. A thin sheet or cylinder of gutta percha, with the pattern on the inner side, is placed within a cylinder; another sheet or cylinder, plain, of gutta percha, is placed within the former cylinder, and a hollow metallic cylinder or core, capable of being heated or cooled by steam or water, is placed within it, leaving a space between them; into this space is forced soft heated gutta percha till it is filled, when the heat and pressure combined will cause it to soften the plain cylinder of gutta percha, adhere to it, and press it into the figured surface of the first cylinder, thereby stereotyping it, and producing a *finished roller*.

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Secondly. Consists of a printing apparatus, whereby both sides of two or more sheets of paper may be printed as they pass through the machine. In the drawings given there is shown a surface printing roller, having a small bowl or pressing roller placed over it; and another bowl placed under it, to which an upward pressure is given. This roller, the centre one of three printing rollers, may therefore print at one time from its lower as well as from its upper surface, being supplied at each side with a set of suitable colour furnishing rollers. In the same framing which carries the above set of rollers are other two printing rollers with accompanying bowls placed on each side of and parallel with the first set; the upper surface of one of these printing rollers is level with the under surface of the first roller, so that a piece of paper progressing forward from left to right will be printed first on its under surface and then on its upper surface; and another sheet passing the reverse way will be printed by the third cylinder placed so that its under surface, the printing surface, will be on the same plane with the top of the first or centre roller, so that it will be printed first on one side and then on the other.

Thirdly. Relates to a "folding apparatus." The table on which the paper is to be folded may be suitably moved up and down to accommodate its surface to the height of the folded paper. At each end of the table is placed a valve on curved slides, which presses on the table by means of springs. The end of the paper being placed under one of these valves and held there, a plate supported on the end of two levers, one on each side of the table, and properly actuated, carries the sheet over to the other end of the table, and pushes the fold under the opposite valve, where it is held; another plate, also supported by two levers, then carries the sheet back, and pushes the fold under the first valve, and so on till the sheet is entirely folded. These pairs of levers are actuated and preserved in their relative positions by their ends working in the forks of an oscillating lever or pendulum placed above.

[Printed, 6s. 7d. See Mechanics' Magazine, vol. 55, p. 77; Patent Journal, vol. 11, p. 283.]

A.D. 1851, May 13.—N° 13,631.

WILKINS, EDWARD.—"Improvements in labels or tickets." These improvements consist in printing labels, delivery notes, check tickets, &c., in such a manner that each may be cut or torn

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in two or three parts, each part having distinctive marks on it, so that it may at all times, when required, be identified as part of one original label.

[Printed, 10d. See Patent Journal, vol. 12, p. 100.]

A.D. 1851, May 29.—Nº 13,648.

REYNOLDS, JOSEPH.—“Improvements in the manufacture of “cards usually denominated playing cards.” This invention consists in the application “of punches (having rims with geometrical “outlines) to the cutting of those cards commonly called and known “as playing cards, which outlines may be varied at pleasure, and “may consist of patterns formed of rectilineal or curvilinear out-“lines, or of a mixture of both; and it is found that cards so edged “afford a greater facility in holding the pack in hand, shuffling, and “dealing the same, and perforations of various kinds may also be “added. When desirable, the cards so perforated to be carefully “pressed in a press, so that no raised edge or irregularity may “remain on the face or surface of the card. The punch has two “guide rods and is used in a screw press of the ordinary construc-“tion, to which is added a plate for guiding the strips of card-“board from which the cards are made under the punch.”

[Printed, 9d. See Mechanics' Magazine, vol. 55, p. 459; Patent Journal, vol. 12, p. 122.]

A.D. 1851, July 7.—Nº 13,688.

BAILDON, HENRY CRAVEN.—These improvements consist, firstly, “in writing, printing, or marking the letters, characters, or “figures of documents upon coloured paper, parchment, or other “proper material, by means of such a chemical fluid or mixture “as will discharge or change the colour of those parts of the paper “or other material thus written or printed upon, or marked in “manner and for the purposes above described.

“Secondly, in writing, printing, &c., the letters, &c., of docu-“ments upon coloured paper, parchment, or other proper material, “by means of such a chemical fluid or mixture as aforesaid, such “fluid or mixture being also coloured or tinted so as to color or “vary the color of those parts of the paper, parchment, or other “material to which it may be applied.”

Thirdly, in the combination of the above modes of printing, &c., with ordinary modes of writing and printing. The chemical fluid

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used may be a solution of alkali partly or wholly caustic. Other solutions may be employed, such as cyanide of potassium, ferrocyanide of potassium, acids, and their combinations, ammonia, &c., on paper prepared suitably, so that some visible chemical action will take place between the substances used to write with, and the colouring matter with which the paper, &c., is prepared. The material to be printed may be prepared with prussian blue, chromate of lead, solution of iron, &c., as required. The object of this invention is prevention of fraudulent alterations in documents.

[Printed, 4d. See Mechanics' Magazine, vol. 56, p. 59.]

A.D. 1851, July 31.—N° 13,707.

**MANSELL, JOSEPH.**—“ Improvements in ornamenting paper “ and other fabrics.” These consist, “ first, in producing upon “ the class of fabrics already designated ornamental, designs or “ patterns by partially removing the glaze or gloss which such “ fabrics have received.” This may be effected by applying moisture to the paper or fabric through a cut stencil plate or by block printing.

“ Secondly, in partially glazing or glossing paper and other “ fabrics that are capable of receiving a gloss by pressure, so as to “ produce ornamental designs or patterns by contrast of the dull “ and glazed parts of the surface of fabrics so treated.” “ In “ carrying out this mode of operating, I prepare a polished steel “ roller, turned perfectly true, or a polished steel plate of suit- “ able thickness (say, three-sixteenths of an inch), and upon “ this polished steel surface I draw any required design in “ common stopping-out varnish, or, in fact, any substance that “ will resist the action of dilute acid. When the surface of the “ roller or plate is covered with the design to the extent required, “ I subject the exposed parts of the polished surface to the cor- “ roding action of dilute nitric or other suitable acid, and by “ that means I change the character of the surface of the exposed “ part of the roller or plate by removing the polish therefrom. “ As soon as this change has taken place, (the time for effecting “ which will vary according to the strength of the acid used, the “ temperature of the atmosphere, and other causes,) I throw off “ the acid, and wash the roller or plate with water. I then “ remove the stopping-out varnish, and have an ornamented,

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" surface still smooth to the hand, but presenting to the eye the  
" marked difference of dead and burnished metal. If it is a roller  
" which has been thus prepared, I mount it in a suitable framing,  
" and place over it a perfectly smooth pressing roller, made, by  
" preference, of some slightly yielding material. Between these  
" rollers I pass the paper or other fabric to be ornamented with  
" the 'satin damask' finish (driving the steel roller by manual  
" or other power), and thereby produce on the fabric a glazed  
" pattern corresponding to the bright surface of the metal roller.  
" In using a plate prepared as above described, I pass it, together  
" with the fabric to be ornamented, between a pair of pressing  
" rollers, and thereby obtain on the fabric a counterpart of the  
" pattern contained on the plate."

[Printed, 8d. See London Journal (*Newton's*), vol. 61 (conjoined series),  
p. 99; Mechanics' Magazine, vol. 56, p. 188.]

A.D. 1852, January 8.—N° 13,891.

ADDENBROKE, JOSEPH.—" Improvements in the manu-  
" facture of envelopes, and in machinery used therein." These  
improvements relate, " first, to the several arrangements and  
" means for feeding, stamping, and gumming; secondly, to the  
" means and machinery for pressing over the sides of envelopes  
" after being creased in the folding box; and, thirdly, to the  
" working of machinery used in the manufacture of envelopes by  
" means of a treadle or treadles."

And consist generally in an improved arrangement of the various  
parts of a machine for making envelopes by which the feeding  
of the blank, the impressing of the required die, the gumming,  
the creasing into the proper form, the inclining of the flaps and  
depressing of them in their proper relative positions, the discharging  
of the envelope upon an endless band in the trough below, the  
pressing of the flaps down upon each other, and the final delivery  
of the envelope complete into any receiver that may be placed for  
its reception, are performed in a consecutive and continuous  
manner.

[Printed, 2s. 6d. See Mechanics' Magazine, vol. 57, pp. 61 and 69.]

A.D. 1852, January 24.—N° 13,917.

GATHERCOLE, JAMES.—" Improvements in the manufacture  
" and ornamenting of envelopes, parts of which improvements are

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“ applicable to other descriptions of stationery, and in the machinery, apparatus, or means to be used therein.”

This “ invention relates, firstly, to various arrangements of machinery, apparatus, or means for the manufacture or production of envelopes from the plain flat blanks, wherein the several processes of gumming, embossing, creasing, and discharging are or may be accomplished in one machine, the creasing being performed without the use of a folding box or mould, by the adoption of an elastic creasing surface for the pressing action of the creaser.”

“ Secondly, to the manufacture of paper bags or other inclosures of paper or other material from flat blanks, whereby bags or receptacles of various kinds may be completed from the original blanks in one machine;” and consists,—

“ First, in the general arrangements and combination of machinery or apparatus for gumming, carrying, embossing, creasing, and discharging envelopes in one continuous operation.”

“ Second, in the application to moistened flaps of envelopes, or to that portion thereof which have been previously embossed for the seal of adhesive or cementing material in a dry state, in combination with and forming part of a folding and stamping machine.”

“ Third, in the application and use of the gummer or gumming action for conveying the envelope blanks to the creasing bed.”

“ Fourth, in the system or mode of manufacturing or producing envelopes, wherein the gumming and conveying of the blanks are simultaneously carried on.”

“ Fifth, in the application and use of a creasing surface of caoutchouc or other soft elastic substance in combination with a knife-edged creaser or plunger, for creasing the blanks and elevating the envelope flaps.”

“ Sixth, in creasing envelope blanks and elevating the flaps thereof by the pressure of a sharp edge on blanks laid on a soft elastic surface.”

“ Seventh, in manufacturing or forming bags or receptacles of a similar nature, as described.”

“ Eighth, in the application and use of an engraved or figured roller or block surface for connecting the junctions of bags.”

“ Ninth, in the application and use of a mandril or core of the section of the completed bags for folding and shaping bags.”

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" Tenth, in the application and use of a core or mandril in combination with a folding case for folding and shaping bags, as described."

" Eleventh, in the application and use of an expanding and contracting mandril or core for folding bags."

" Twelfth, in the manufacture or formation of bags by means of an internal core combined with end and side folders."

" Thirteenth, in the application and use of Indian rubber or caoutchouc as a folding or cementing surface in the manufacture of bags."

" Fourteenth, in the general arrangements of the machinery or apparatus for folding bags, as described."

[Printed, &c. 1867. See Mechanic's Magazine, vol. 57, p. 118; Practical Mechanic's Journal, vol. 5, p. 186.]

A.D. 1862, April 15.—Nº 14,067.

NEWTON, WILLIAM HOWARD.—(A communication.)—" Improvements in machinery or apparatus for cutting paper, paste-board, or other similar substances."

The first part of this invention consists in combining "a vibrating knife with a moveable platform and clamp, so that the paper can be firmly held and clamped on the platform elevated to submit the paper to the action of the vibrating knife." To effect the "vibrating" or reciprocating movement of the knife, the desired motion is imparted to it by two suitably formed cams placed on a horizontal shaft, and acting against two rollers placed on the face of the knife. One of these face cams causes the knife to slide in the framing in one direction, and the other to bring it back. The cam shaft may be turned by a crank or otherwise. The platform on which the paper to be cut is placed forms part of a vertical sliding frame adapted to slide in guides in the main frame, and may be set up to the knife by means of a rack and sector at each side actuated by a hand lever. The "clamp" to hold the paper tight on the platform during the operation of cutting is a "bar," supported at each end by two vertical rods that slide in the same guides as the frame of the platform. These rods are provided at their lower ends with racks engaged by the cogs of two pinions on a horizontal shaft mounted in the sliding frame. This shaft is provided with a lever, the action of which will cause the clamp bar to be elevated or to be depressed on the paper.

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as desired. A suitable catch is applied to prevent the lever from receding.

Secondly, consists in "an arrangement of platform or table, " and a carriage or feeding motion with a moveable clamp for "clamping pasteboard, &c. on to the platform, and the combination of a stationary and moveable shear." The pasteboard being placed on a platform is fed towards the shears by means of two racks actuated by a pinion, ratchet wheel, levers, and cam. The clamp bar is then brought down by rods actuated by cams and springs, and holds fast the pasteboard, while the moveable knife is caused to descend by means also of rods and cams.

[Printed, 1s. 6d. See Mechanics' Magazine, vol. 57, p. 386.]

A.D. 1852, April 29.—N<sup>o</sup> 14,099.

GOODMAN, GEORGE.—"An improved method or improved methods of ornamenting japanned metal and papier mâché wares."

"These consist in ornamenting of japanned metal and papier mâché wares by transferring thereto designs printed in oil colours upon paper, the said printed impressions being obtained from a series of engraved plates, on each of which plates those portions only of the design are engraved which are of the same color or into the colour of which the color on the said plate enters."

A variety of mixed colours or tints, such as green or purple, may be obtained by causing one plate to print its colour so that it will overlap the colour printed by another plate.

[Printed, 3d. See Mechanics' Magazine, vol. 57, p. 395.]

A.D. 1852, May 8.—N<sup>o</sup> 14,123.

ARMITAGE, WILLIAM.—"An improved safety envelope, and certain improvements in the machinery to be used in the manufacture of the same."

"The first part of this invention consists in manufacturing envelopes entirely of woven or textile fabrics, instead of paper, or of woven fabrics and paper combined. In manufacturing envelopes for ordinary use, I stamp or cut the fabric which has been woven in the usual manner into pieces of the required shape, which pieces, having been folded, are cemented or gummed at their edges to form envelopes; the outer surface of

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" the fabric must be glazed or otherwise prepared in the ordinary manner, so as to produce a surface suitable for writing upon." The machinery for making paper envelopes is used.

" The second part of this invention consists in manufacturing envelopes of what is generally called a double fabric, that is to say, a fabric woven in such wise that certain parts of the piece consist of a single fabric, and other parts of the same piece consist of two separate fabrics; the necessary changes in a loom for producing this fabric can be made without further explanation, as any practical weaver acquainted with jacquard engines can make double fabrics to the required pattern."

" The third part " consists in the machinery for cutting the double fabric asunder lengthwise" in strips, so as " to separate the portion that is woven single and to produce the flaps of the envelopes."

" The woven fabric is pulled over a table, on which is placed an instrument with " a blunt nose," which enters between the double fabric, and is provided with two fixed knives, which cut the double fabric as it passes.

[Printed, &c. See Mechanics' Magazine, vol. 57, p. 415.]

A.D. 1852, December 17.—N° 14,352.

SHAW, GEORGE.—(A communication.)—" Improved machinery for making envelopes and bags." This invention consists, first, in the application of the adhesive properties of india-rubber, which has been immersed in turpentine and burned till the india-rubber is partially melted and then wiped, for the purpose of conveying blank envelopes from one part of the machine to another. The burnt india-rubber may be applied to the finger of the usual transferring instrument.

Secondly, relates to the creasing of blanks for folding into envelopes or bags. The four sides of the recess, into and down through which the blank is to be forced and creased by the plunger, are composed of rollers or tubes of vulcanized india-rubber with axis revolving in bearings. The edges of the plunger should be comparatively sharp, and the quadrangular space left between the tubes should be somewhat less than the face of the plunger.

[Printed, &c.]

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## PATENT LAW AMENDMENT ACT, 1852.

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1852.

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A.D. 1852, October 1.—N<sup>o</sup> 55.

MUMBY, GEORGE.—(Provisional Protection only.) “Im-  
“ provements in the manufacture of envelopes, and the ma-  
“ chinery, apparatus, or means to be employed therein.” These  
improvements consist in proposed re-arrangements of parts of  
apparatus, whereby the manufacture of the envelope may be com-  
pleted in one machine. The Patentee proposes the “application  
“ and use of electricity, magnetism, or electro-magnetism, in  
“ feeding the blanks, or in other apparatus requiring paper to  
“ be fed.”

[Printed, 2*d.*]

A.D. 1852, October 1.—N<sup>o</sup> 110.

WRIGHT, JOHN, and STURGE, EDWIN.—“Machinery for the  
“ manufacture of envelopes.” The general arrangement of this  
machine consists of a frame on which is placed, underneath, a  
lever suitably actuated to and fro; on the upper end of the lever  
is placed a segment rack, which works into a horizontal rack, ex-  
tending across the machine, which may actuate four or more  
annular plates, one for each envelope, provided with eccentric  
slots. Over the annular plates is placed another circular plate,  
upon which the slides for folding the flaps of the envelope are  
situated. Pins passing through to the slots in the annular plate  
below cause the slides to move out and in. The centre of this  
plate is cut away to the shape of the desired envelope, and over  
this plate is another plate cut away at the middle to the shape of  
the paper blank, but so placed as to allow the slides to work freely  
between them. The paper to be folded is placed in the upper  
*opening.* A plunger is then caused to descend and crease the

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envelope, and recedes; the slides are then moved in, and fold the flaps down, and a presser or swinging plate from beneath is caused to rise and complete the folding. On its descent the envelope becomes liberated and discharged. The gum is supplied from a fountain through holes in the plate, with the slides, on which the paper blank was originally placed; and a presser is caused to precede the plunger in its descent, to bring the paper in contact with the gum surface, and then to recede. The slides which fold the lappets are so formed that they commence to act upon the paper at the ends of the creases, instead of the middle of the lappet, and they are so shaped that each slider will act on two lappets, and arranged so that they will carry the proper lappet down first, and the others in the required succession.

[Printed, N.Y.]

A.D. 1862, October 8.—N° 308.

LEWISIIWATTE, JOHN.—"Improvements in cards and tickets, and in machinery for cutting, printing, numbering, and marking cards, tickets, and paper." These improvements consist first, "in employing the material known as scaleboard in the manufacture of cards and tickets." The scaleboard made from thin sheets of wood in the usual way, may be saturated with a suitable glutinous or oily matter, to prevent warping, and covered on one or both sides or not with cloth or paper.

Secondly, of a "machine for cutting slips or strips of card-board or other suitable material transversely into cards or tickets." The slips being laid upon a series of cutters placed in a frame, a corresponding series of cutters are brought down, and cut the slips into the desired lengths. The cutters may be adjusted by set screws. Each cut card is then acted on by a "pusher block" placed between each of the upper cutters, and caused to descend into corresponding spaces or receptacles placed between each of the lower cutters. In these receptacles are placed blocks, the upper surfaces of which are made slanting, and as the tickets are cut and received in the receptacles, the blocks are caused to descend a regulated distance, by means of a rack and pinion, or other suitable means, till the said receptacle is filled, when the back cover is taken off, and the tickets removed.

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Thirdly, relates to "improvements on and additions to the numbering machine, for which I obtained Letters Patent, dated " 23 July, 1847," and consist, first, in "the mode of feeding or " supplying the cards or tickets. " The tickets being placed in a hopper of the form of the ticket, and resting on ledges at the bottom, the undermost ticket is moved forward along the ledges, by means of a slide having a slight projection on it, actuated by cam and lever, on to a "moveable plate, turning on pivots." This plate has on its under side a groove with ledges coinciding with the ledges on the bottom of the hopper, from which the ticket is advanced, and is there held secure from shifting, by means of side springs. This grooved plate is situated immediately over the printing, &c. arrangements. The "back of the groove" being lined with vulcanized india-rubber, affords a soft bed to the ticket while its under surface is being printed. The ticket after being printed, &c., is moved as before, between guide ledges, by means of the succeeding tickets, advancing till it arrives under the mouth of another hopper with spring ledges, in which each ticket in succession is elevated by means of a plunger, worked by a tappet. Secondly, in the modes of "inking the type and numbering "wheels" and distributing the ink. The inking rollers are caused to move towards and against the distributing rollers, by means of a frame actuated by a cam and lever and inclined planes, and the ink may be supplied to the distributing rollers by means of a roller working in ink troughs. To one or more of the serving rollers may be imparted a traversing motion.

Fourthly, relates to "arrangements by which several parts of " the machine are thrown out of gear, and notice given when a " determined amount of work has been performed, or when " tickets fail to be regularly delivered after printing." The amount of work done may be shown by an indicator, the ratchet wheel of which is actuated by a lever and cam movement; and the machine itself may be thrown out of gear, or be caused to notify a derangement by ringing a bell, by means of a tappet acting on the arm of a rod, which, while the cards are properly progressing, may move freely up and down through a hole in a plate, but which movement is intercepted by a slide, acted on by a spring, covering the hole, when the tickets fail to move.

[Printed, 2s. 4*d*.]

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A.D. 1852, October 19.—N° 439.

O'BYRNE, MARTIN WALTER, and DOWLING, JOHN.—“A machine for cutting paper, mill-board, leather, vellum, sheet metals, and other suitable materials, for useful and ornamental purposes.” This machine consists, first, of “arrangements of parts for effecting the raising and lowering of the table, and for actuating the knife employed.” The table on which the paper is placed is secured to a sliding frame and caused to rise when required by the “gravitating power” of a weight placed on the end of a lever, the other end being attached to the bottom of the frame by means of a stud. The table may be also elevated and depressed by a rack formed of pins and a pinion. The pinion shaft has an universal joint which admits of the pinion moving to the other side of the rack pins, as in a common mangle, and thereby reversing the movement of the rack which actuates the table. The knife is attached to a casting which is caused to slide backwards and forwards in a slot actuated by a crank and rod. By another arrangement the table is made stationary and the knife with its framing is caused to descend by means of a worm screw, acting into a rack attached to the framing. The worm screw as it rotates in work with the rack slides up and down, as required, upon a feather on its shaft, and thereby actuates a lever, the further end of which causes the knife frame to be elevated or depressed, as required. The knife in this case receives its horizontal to and fro motion as before; when the threads of the worm are elevated beyond the teeth of the rack the further depression of the knife ceases.

[Printed, 11*½*d.]

A.D. 1852, October 28.—N° 549.

DONKIN, BRYAN, the Younger, and FAREY, BARNARD WILLIAM.—“Improvements in the machinery for measuring or marking off long lengths or continuous webs of paper or other materials into any required lengths, for the purpose of being cut or otherwise disposed of.” These improvements may be effected by means of a roller, rod, or lath, placed or attached, at each end, to the arms of a pair of levers, which are caused to vibrate up and down, carrying with them the roller and the desired length of paper to be measured, by means of a crank and connecting rod.

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The paper to be measured is placed over two small tables, upon each of which is a clamp board, which holds the paper on the tables. One of the clamp boards is then elevated by means of cams and rods, and the roller caused to descend between the two tables and carry the paper along with it the desired distance. The clamp board then descends, and the roller rises to its original position. The other clamp board on the other table is, at the same time, elevated to allow of the measured portion of paper to be drawn forward by "feed rollers" towards the cutters, and then to descend again on to its table. The first clamp board is again elevated from its table, and the roller descends as before.

[Printed, 1s. 2*d*.]

A.D. 1852, October 28.—N° 553.

BIELEFELD, CHARLES FREDERICK.—"Improvements in "billiard and bagatelle tables." These improvements consist in "applying papier maché, or a plastic composition in the nature "thereof, in forming the beds or surfaces of billiard and bagatelle "tables." The papier maché, in one large sheet or in parts, may be screwed to a suitable framing of wood or iron, and its upper surface then planed true. The table may then be finished in the usual manner.

[Printed, 2*d*.]

A.D. 1852, November 3.—N° 628.

SIDEBOTTOM, ALFRED.—"Improvements in machinery or "apparatus for cutting books, paper, and other substances." These improvements consist first in an arrangement of parts whereby the book or other article to be cut being placed on a table is caused to move forward by means of a bar actuated by a lever and excentric, and be brought under the cutter. A presser is then brought down by means of a cam which holds the article tight till the platten, suitably guided, is caused to descend by means of two excentrics; the cutter or cutters are fixed to the platten by means of adjusting screws, and descend with it.

Secondly, in the construction and use of "adjustable cutters." Two of the cutters for cutting a book being attached to moveable holders may be adjusted in the required position on the platten and fixed by screws.

[Printed, 1s. 2*d*.]

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A.D. 1852, November 4.—N° 640.

KLOTZ, MARC.—“An improved process and apparatus to be “employed in ornamenting fabrics, leather, paper, and other “surfaces.” This process consists in attaching to the material to be ornamented, objects “cut out of tissue, cloth, leather, paper, “or any substance that can be cut or moulded,” by means of a suitable cement; “gum lake” dissolved in spirits of wine, being preferred for that purpose. A metallic guide having the desired ornamental form cut out of it is placed on the material, and the cut ornament being placed therein, a heated “goffer” or iron die with suitable designs “in hollow” therein is brought down and pressed by suitable means. This will emboss the ornamental shape, and cause it to adhere also to the material by melting the cement.

[Printed, 2*d.*.]

A.D. 1852, November 11.—N° 715.

WYPER, JAMES COWAN.—(Provisional Protection only.) “Improvements in the figuring and ornamentation of book bindings “and covers of a similar character.” Relating to the “ornamenting “and lettering or figuring of bindings or covers for books, portfolios, “desks, and other articles; also leather, paper, and cloth surfaces,” “by lithographic or block printing as a substitute for the ordinary “tooling” and embossing. Different coloured “inks, gold, or “other leaf, or bronze may be applied.” The same may be performed by means of “zincographic, anastatic, or other modification of the common lithographic processes.”

[Printed, 2*d.*.]

A.D. 1852, November 20.—N° 805.

EDWARDS, JOSEPH.—(Provisional Protection only.) “An improved envelope, and the means of effecting additional “security to the same.”

This improvement consists in gumming both surfaces of the flaps of envelopes; and in indenting or scalloping the seal flap of envelopes in order that the sealing wax may adhere better; and also in gumming that portion of the envelope upon which the postage envelope will be gummed.

[Printed, 2*d.*.]

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A.D. 1852, November 29.—N° 904.

NICOLLE, EUGENE.—(Provisional Protection only.) “Im-  
“ provements in apparatus for damping, cutting, and attaching  
“ stamps and labels.” “The stamps are shifted forward, which  
“ are supplied in a continuous strip of one stamp in width,  
“ through proper guides, to the cutter, the action of which is given  
“ from a cam or lever on the main shaft. One stamp being cut  
“ off, is received in a small chamber of rather larger area than the  
“ stamp, which chamber has a piston working upwards by another  
“ cam or lever on the main shaft. The letter or paper having  
“ been first passed between a spring and roller, the latter being  
“ partially immersed in a reservoir of water, or gum and water,  
“ fixed on the top of the apparatus, is then passed over the stamp  
“ or label, and its position regulated by proper guides. On turn-  
“ ing the crank, the piston brings up the label or stamp already  
“ cut off, and attaches it to the damped paper or letter.”

[Printed, 2*d.*.]

A.D. 1852, November 30.—N° 912.

JEFFS, WILLIAM.—“Improvements in manufacturing letters,  
“ figures, and ornamental work, and in the mode of attaching the  
“ same to wood, stone, iron, and certain other materials.” These  
improvements consist, first, “in the mode of manufacturing letters  
“ and figures of cast iron or other metal, coated with sheet brass  
“ or other metal.”

Secondly, “in the application of gutta percha and papier maché  
“ to the manufacture of letters and figures for shop fronts and  
“ other similar purposes.”

And, lastly, in the mode “of attaching such figures to wood,  
“ &c.” Spikes may be attached to the letters by casting the  
material so that it will surround the heads of the spikes; or slots  
may be cast or formed in the backs of the letters, or in the board,  
&c., to which they are to be attached, which will hook on to cor-  
responding flat-headed nails or screws.

[Printed, 5*d.*.]

A.D. 1852, December 3.—N° 952.

McNEE, DUNCAN.—“A machine for printing with colours on  
“ cloth, which is also applicable for printing ornamental designs

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“ on paper.” “The nature of my said invention consists of a combination of two or more surface printing rollers, with certain mechanical parts, by which a machine is constructed capable of traversing the fabric to be printed, and by which the different parts of the pattern on the several rollers are made to fit with correctness.” The surface rollers are supplied with colour by means of endless sieves, and their axes are so connected by cranks and bars, that they must revolve with perfect uniformity and exactness as they traverse over the surface of the fabric to be printed.

[Printed, 5*d.*.]

A.D. 1852, December 4.—N° 960.

BENTLEY, JOSEPH.—“Improvements applicable to fire-arms.” “These improvements are applicable to that class of fire-arms known as revolvers, and which consist in an improved bolt or catch to hold back the cock (or hammer) off the nipples during the act of loading, and arrangements for lifting the hammer and causing the chambers to revolve during the rising of the cock, and securely holding them (the revolving chambers) in the required position during the time of firing.” (See Abridgments on Fire-arms.)

“The Patentee claims the use or application of gutta percha and papier maché to the manufacture of side plates for the stocks of fire-arms.”

[Printed, 8*d.*.]

A.D. 1852, December 20.—N° 1109.

DURANDEAU, JEAN.—(Provisional Protection only.) “Means of obtaining marks and designs in paper.” “On zinc plates the marks or designs are written, engraved, lithographed, &c.; and the paper, being placed between the zinc or other plates, is made to pass in a laminating machine, and thus the designs or marks on the plates are transferred on to the paper, or rather indented in it.”

[Printed, 2*d.*.]

1853.

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A.D. 1853, February 1.—Nº 276.

NEWTON, ALFRED VINCENT.—(A communication.)—“Im-  
“ provements in block printing machinery.” “The Patentee  
“ claims, first, holding the printing block in contact with the paper  
“ or stuff to be printed during a quarter revolution, more or less,  
“ of the cam shaft, while the necessary pressure is applied to transfer  
“ the colour to the material, without interrupting the continuity or  
“ velocity of the other movements of the machine, by means of the  
“ devices made use of for that purpose, or for any others calculated  
“ to produce the same result.” “Second, the cam E, constructed  
“ and operating as described for the purpose of prolonging the  
“ pressure of the block upon the paper, in the manner and for the  
“ purposes set forth.” “The cam E, for about a quadrant, is  
“ an arc of a circle, and as it revolves, the pin resting upon this  
“ periphery remains stationary. The pin, and with it the stan-  
“ dards and platen then descend,” and during the time that the  
“ pin is passing through the succeeding arc “the platen is in its  
“ lowest position, and the block rests upon the printing table.”  
“ An enlargement upon the cam, which bears upon the upper  
“ surface of the pins, and presses the block firmly upon the paper,  
“ in a manner similar to that practised in the hand method.”  
“ Third, the vertically revolving sieves, in combination with the  
“ carriage, and the color rollers, constructed and operating in  
“ manner substantially as described.” “Fourth, the combination  
“ of elements in which the intermittent traversing motion is  
“ communicated to the carriage and color rollers, viz. the segment  
“ rack, and the rods” as described.

“ Fifth, the device employed for feeding the paper or stuff to  
“ be printed, and by which the register of the pattern is obtained.”  
The feeding is effected by rollers, one of which moves quicker than  
the other, thereby producing a constant drag upon the paper; and  
the register is effected also by rollers. An intermittent feed  
motion is effected by the action of a ratchet wheel.

*[Printed, 7*jd*.]*

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A.D. 1853, February 7.—Nº 333.

TABBERNER, JOHN LONDE.—(Provisional Protection only.)  
“ Improvements in the application of granite and similar substances to ornamenting purposes and to the construction of buildings.” “ The object of this invention is the reduction of granite and similar substances to a powder [by Captain Shrapnel's plan in preference], and the application of such powdered substances to the manufacture of paper hangings, to the decoration of the walls of rooms, and the exterior of houses, and constructions of all kinds; and also by the mixture thereof with clay, to the production of a building material never before produced, and which, at a slight addition to the cost of common bricks, will produce a building material nearly equal to stone.”

[Printed, 2*d.*.]

A.D. 1853, February 10.—Nº 361.

BREESE, CHARLES.—“ Improvements in ornamenting papier mâché, japanned iron, china, and other hard or bright surfaces, with gold.” “ After the surface to be ornamented has been polished, I wash it over with a solution of isinglass and water, and while wet I lay on gold leaf in the usual way, and allow it to dry. I then take an impression on sized tissue paper from an engraved plate or stone, or other source, with a composition or colour (capable of resisting acid or water) and transfer the pattern produced in such composition or colour on the sized tissue paper to the surface of the gold, and damp the paper, when it may be drawn off, leaving the pattern on the gold. When sufficiently dry I remove the superfluous gold leaf by rubbing with a little cotton wool made damp with water; or I sometimes pour on dilute nitro-muriatic acid, which will bite away the gold not covered by the pattern. I then wash off the composition with turpentine or other suitable spirit, when the pattern will appear in bright burnished gold.”

[Printed, 2*d.*.]

A.D. 1853, February 24.—Nº 469.

DE LA RUE, THOMAS.—“ Improvements in producing ornamental surfaces to paper and other substances.” “ This im-

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“ vention consists in the producing of [iridescent] films on paper  
“ and other substsaues by dipping them into, or spreading on  
“ them, a solution in ether, or other solvents, of gun cotton, or  
“ other similar products, which are called by chemists xyloidine  
“ and result from the action of nitric or sulpho-nitric acid on  
“ vegetable matters, the solutions being used either with or with-  
“ out resinous varnishes.”

[Printed 3*d.*]

A.D. 1853, March 1.—N° 514.

McADAMS, JOHN.—“ Improvements in machinery or apparatus  
“ for printing on leaves of books their designations, numbers, or  
“ devices, or those of their pages, which machinery or apparatus may  
“ also be used to advantage for printing designating numbers or  
“ devices on various other articles.” The Patentee claims as his  
invention “ the use of type chains in a machine for paging account  
“ books;” “ the paging account books by means of types arranged  
“ in continuous succession, from 1 to the highest number used;”  
the employment “ of two series of types, one of the odd, and one of  
“ the even numbers, in their natural order, as represented in  
“ sheet 1, for the purpose of printing the opposite sides of the  
“ leaves as described, and thus completing the work as it pro-  
“ gresses;” “ the tongue or separator in combination with two  
“ series of types, in the manner and for the purpose herein  
“ described;” “ the combination of the smut belt with the tongue  
“ or separator, so that it shall act in combination with both series  
“ of types, substantially in the manner and for the purposes  
“ specified;” “ the printing the numbers on the adjacent sides or  
“ pages of two contiguous leaves at the same time, by means of  
“ two vibrating platens, placed one above and the other below the  
“ type chain, and so operated by one movement of the treadle as  
“ to press the two sheets or leaves upon the upper and under  
“ sides respectively of the type chain, bent around a flat shaft or  
“ bed;” “ the flat rotating shaft, which serves as a bed for the  
“ type chain, and feeds it along the said shaft, making half a  
“ revolution at a time, so as to present a number or type on both  
“ its upper and lower faces to the vibrating platens;” “ the yield-  
“ ing plate, placed on an elastic cushion on the ends of the  
“ vibrating platens, so that the said plate may adapt itself to the  
“ irregularities of the types, and produce a fair impression;” “ the

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“ inking of types by means of a traversing ink roll, which is  
“ made to pass forward and back across the types by the move-  
“ ment of the treadle;” “ the method of applying the leaves of the  
“ book in succession to the types, and registering the printing  
“ thereof by the book itself;” “ the machine for paging books,  
“ after they are bound, composed of the several elements herein  
“ described, or their equivalents, in combination, and adapted to  
“ be worked by the foot of the operator, so as to leave the hands  
“ at liberty to manipulate the leaves of the book, the whole  
“ operating in the manner explained;” “ a machine in which  
“ a single platen is used, passing the page, after its upper side  
“ is printed, first under the platen, and then bending its corner  
“ up over the platen, so as to bring its lower or opposite side  
“ in contact with the types, and thus print the pages in regular  
“ succession.”

[Printed, 1s. 2½d.]

A.D. 1853, March 3.—N° 541.

WRIGHT, JOHN.—“ Improvements in machinery for manufac-  
“ turing bags or envelopes of paper, calico, or textile fabrics.”

These improvements consist, first, “ in the general arrangement  
“ of machinery as described for gumming, cutting, creasing, fold-  
“ ing, and pressing paper, calico, and other textile fabrics for the  
“ manufacture of bags or envelopes.”

“ Secondly, in applying to one or more of the pressing rollers  
“ of bag or envelope making machines, types, stereotypes, blocks,  
“ or other raised printing surfaces, for the purpose of imparting  
“ any required device to the bags or envelopes while under the  
“ process of manufacture.” This may be effected by construct-  
ing the pressing roller of the bag making machine with a “ raised  
“ printing surface,” to which colour may be supplied by a system  
of “ink distributing rollers.”

[Printed, 7½d.]

A.D. 1853, March 9.—N° 593.

HOGG, JAMES, Junior.—“ Improvements in machinery or ap-  
“ paratus for cutting paper and other substances.” The Patentee  
claims, first, “ the general arrangement and combination of  
“ machinery by which the knife or cutter, of whatever convenient  
“ form, is made to operate upon the paper or other substance re-

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" quired to be cut." The knife, which may be plain or serrated, is attached to a plate to which a vertical movement is imparted by means of screws actuated by bevil gearing; this plate moves up and down in V grooves on the face of a sliding box, to which is imparted, at the same time, a lateral and reciprocating movement by means of an excentric iron rod. The knife therefore as it descends on the paper placed on the table below, and which is screwed up tight against the head of the press, has the perpendicular as well as the lateral and reciprocating motions. This machine is provided with reversing straps to elevate the knife on the completion of a cut. The shaft which carries the bevil gearing actuating the depressing and elevating screws being free to slip laterally in its bearings, it follows that, although the sliding box is continually travelling in a lateral direction, with a reciprocating motion, yet the bevil wheels will always keep in gear. The arrangements may be modified so long as the nature of the invention is adhered to.

Secondly, "the knife or cutter, consisting of a straight knife sharpened on both sides and secured in its place in such a manner [by means of holes, screws and slots] that the edge next the head of the press (or what corresponds thereto) is perpendicular to the surface of the heap of paper, or other substance required to be cut."

[Printed, 5*d.*.]

A.D. 1853, April 5.—N<sup>o</sup> 817.

PIDDING, WILLIAM.—"Improvements in the manufacture of woven, textile, or other fabrics, and in the machinery or apparatus connected therewith." "I take silk or other material of close texture (including paper), saturate the material with gelatine or gum, stretch it on a frame, and pass through the silk or other material thus prepared points of wire or needles arranged and fixed in an instrument, in accordance with the design previously made on the fabric, or in equi-distant places. I produce a fabric by means of inserting studs or other forms of material described in a former Specification of Patent 598, dated ninth March one thousand eight hundred and fifty-three [or by means of spun glass, gelatinized or gummed, and allowed to dry, and then cut into studs by means of numerous knives.]

[Printed, 2*d.*.]

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A.D. 1853, April 6.—Nº 829.

**JOHNSON, WILLIAM.**—(Provisional Protection only.) “Improvements in the manufacture of safety paper.” “This invention consists in the employment of the rough and irregular surface produced by the fracture of a piece of cast iron or other brittle material, for giving the requisite water-mark to paper employed in the manufacture of bank notes, cheques, coupons, &c. A bar of cast iron, or any other brittle material, is broken transversely, and a piece of soft metal, gutta percha, or other suitable material is inserted between the broken surfaces, and receives a correct impression of their irregularities. From this matrix is obtained the regular design which is required, and which is transferred to the wire cloth on which the paper is made.”

[Printed, 2*d.*]

A.D. 1853, April 7.—Nº 833.

**MORGAN, WILLIAM.**—“Improvements in paper and card-board cutting machines.” These improvements consist, first, in arranging the machine so that the table will traverse and bring the paper in contact with a rotating knife plain or waved at the periphery; or so that the rotating knife will traverse and the table be stationary. The cutter may be caused to revolve by a strap, and be elevated and depressed by means of a cam acting on the lever end which carries the cutter. The paper holder may be traversed by means of straps attached to it at each end, passing over a radius lever which is actuated to and fro by a crank. By modifying the machine the knife or cutter may be caused to traverse.

Secondly, “in arrangements whereby the knife is caused to receive a radial motion whilst in the act of cutting,” “and to return to its place after the cut;” “and in the use of a fixed iron or steel edge for the knife to cut past all.” The knife may be caused to descend by means of screws (or by a hydrostatic press), and a “radial motion” may at the same time be imparted to it by means of a “radius rod,” one end of which is attached by a pin to the framing above, and the other to the knife carrier. The knife thereby receives two motions, a perpendicular one by means of screws, and a lateral one through the sliding of the knife carrier, by means of the radius rod; other suitable

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means may be employed to give the lateral motion. The knife after making a cut may be elevated to its original position by means of reversing gearing in connection with the pressure screws. A regulating steel edge is fixed at one side of the table to secure a "shearing cut" at the last sheet.

Thirdly, in the mode of cutting paper by means of "percussion." The knife, attached to a weight and properly guided, may be elevated and allowed to descend suddenly on the paper, or the knife may be placed in contact with the paper and the weight itself allowed to descend on the knife.

[Printed, 11*½*d.]

A.D. 1853, June 2.—N° 1350.

WHITWORTH, JOSEPH.—"Improvements in machinery for "perforating or punching paper, card, other materials," and which is "particularly applicable to perforating the paper used in "communicating intelligence by electric telegraph;" as well as for "perforating the cards of jacquard engines, or for other purposes." This apparatus consists of a series of punches with square lower ends, which may be depressed through the paper singly, to give square holes, or in sets of three, which will produce oblong square perforations. The punches are elevated and depressed by an excentric shaft, which acts on them through toggle jointed levers. These jointed levers are caused to assume the vertical line, or otherwise, as desired, by means of other levers terminating in keys, representing the letters of the alphabet. When a key is depressed by the hand its lever, acting on the toggle jointed lever, carrying the corresponding punch, brings it more into the vertical line, whereby the plane of action of the punch is so far depressed that it will now penetrate the paper placed underneath, on being actuated as stated by the revolution of the excentric shaft. The paper is fed in and withdrawn from the machine by suitable rollers, and caused to progress forward the requisite distance to receive fresh perforations by means of an escapement wheel, the movement of which is regulated by pallets influenced by the key levers. The die plate has three oblong slots cut in it, to admit of the dies being depressed in threes to form an oblong square perforation; but when a square hole is required, suitable die levers

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are caused to move a partition partly across the opening, whereby one die on descending at a time will perforate the paper.

[Printed, 10*d.*.]

A.D. 1853, June 3.—N° 1362.

DURANDEAU, JEAN, Junior.—“Means of obtaining marks “and designs in paper.” This invention relates to “obtaining “upon paper, manufactured mechanically and in a continuous “manner, marks, engravings, and designs, similar to those “obtained by the aid of water marks in paper made by hand. “These marks may be obtained during the operation of satining,” by passing an “engraved plate, with the satining metallic sheets, “between the cylinders of a laminating machine.”

[Printed, 2*d.*.]

A.D. 1853, June 18.—N° 1492.

GILBEE, WILLIAM ARMAND.—(A communication.)—(Provisional Protection only.) “A new mode of ornamenting stuffs “and paper.” “The invention consists in cutting out designs “of different sorts of tissues, such as wool, silk, thread, cotton, “and paper, and applying the same, by means of an adhesive “composition consisting of gutta percha dissolved in a sand “bath and kept in a liquid state, either above other stuffs, or “paper, or underneath, in which latter case a part of the “material corresponding with the form of the design has to “be cut out so as to produce ornaments and new designs, super- “seding embroidery and serving for various purposes.”

[Printed, 2*d.*.]

A.D. 1853, June 20.—N° 1500.

PAUL, JOHN.—“Colouring paper on the surface.” This invention may be applied also to colouring “woollen, cotton, and “other fabrics on the surface, in short as also in long lengths.” “There will be a trough containing the color, with adaptation for “heating the same; as also a tap for bringing the color on to the “paper and other fabrics, and regulating the supply on the same, “with an agitator traversing along its inner surface; the color “will then be spread by means of one or more brushes, having

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“ a compound rotary and traverse motion by right and left hand  
“ cut screw, rack, and pinion; the paper and other fabrics will  
“ then be finished and smoothed off by means of two or more  
“ brushes, having a compound eccentric and traverse motion from  
“ crank, and the aforesaid screw and rotary motion from centre on  
“ crank; the table is carried forward by a movement attached to  
“ the framework with an endless blanket, and passes on, colored  
“ and cut into lengths as required. This machine can be worked  
“ by manual labor, or by power, and will have as near as possible  
“ the motion of the hand.”

[Printed, 2*d.*.]

A.D. 1853, June 24.—N° 1542.

JOHNSON, JOHN HENRY.—(A communication.)—(Provisional Protection only.) “ Improvements in machinery or apparatus for cutting paper and similar materials.” “ Having cut successively the two plain edges of the books, the third or front edge “ remains to be cut, which must be done by a circular cut, to give “ the required grooved or channeled appearance to the front of “ the book when closed. For this purpose a circular or curved “ knife is brought into action. The form of this knife is some- “ what that of a crescent, the circumference of its outer edge “ corresponding exactly with the curve of the cut to be given to “ the leaves. This knife has a rotatory movement given to it by “ a segmental rack actuated by a pinion. The rack forms a por- “ tion of the knife holder, and the knife is fitted in line with its “ centre of oscillation or vibration; thus a partial rotatory move- “ ment is transmitted to the knife, which rocks or vibrates always “ in the axial line of the centre of the curve forming the blade. “ The leaves to be grooved are held between suitable pressing sur- “ faces, and the knife brought up to them, the frame carrying “ this portion of the cutting mechanism being moved on suitable “ guide rails. During the curvilinear cut of the knife a rectilinear “ movement is also given to it in the direction of its axis by means “ of a traversing screw, producing a species of helical cut by “ the two combined movements of the cutter.”

[Printed, 2*d.*.]

A.D. 1853, July 19.—N° 1714.

BREESE, CHARLES.—“ A method of forming designs and pat- “ terns upon papier maché, japanned iron, glass, metal, and other

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“surfaces.” This invention consists in “first, producing a pattern or design upon paper by printing from stone or other surface in some adhesive material or composition, which is transferred to the surface intended to be ornamented; the paper is removed, and the pattern has applied thereon some material or composition in a finely pulverised state, which will resist the action of acids or other agent or agents employed to act upon that part of the surface not covered by the pattern. Or, instead of the pattern being so treated only after being transferred, in some cases I submit it to the like treatment on the paper, then transfer it, remove the paper, and proceed as above described. When required to ornament glass and metal surfaces with vitrifiable colours, or with metals, I follow the process known in the trade as burning in. The vitrifiable colours or metals (in the state of powder or leaf) are rubbed into, mixed with, or applied on the pattern produced in the resinous or other material or composition aforesaid. When not required for burning in, and for the purpose of producing designs and patterns in colours, or in gold, silver, or other metal, the pattern is produced in an adhesive composition as aforesaid, and has applied thereon the gold, silver, or other metal in the state of powder or leaf, the superfluous metal being wiped away or removed from those parts where the adhesive composition has not been applied. Or the whole surface is covered with gold or silver leaf, and the pattern produced in an adhesive composition, and sprinkled with a resinous powder is applied thereon; the gold or silver leaf is removed from those parts which the pattern does not cover by biting with acid or by simple rubbing. The resinous composition is next washed off with spirit of turpentine or other solvent, and the pattern appears in bright gold or silver.”

[Printed, 3*½*d.]

A.D. 1853, July 29.—N<sup>o</sup> 1774.

JARRETT, GRIFFITH.—“Improvements in machinery or apparatus for stamping or printing colored surfaces.” “These improvements refer to an apparatus to be worked by the hand, and adapted for the desk, counter, or writing table, by means of which a colored mark or imprint may be produced upon a series of papers, cards, or surfaces without any interval of time

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“ being wasted between the successive impressions, the stamping  
“ action of the machine bringing continually a fresh supply of  
“ coloring matter to the die, which is therefore always kept ready  
“ for employment. I prefer, in this apparatus, to employ carbonic  
“ or other chemically prepared paper or material for the purpose  
“ of producing impressions. The apparatus is put in action by  
“ pressing down the die or type, through the medium of the  
“ stamping lever in connection with the slide or pressure bolt.”  
“ The die or type being thus caused to descend, carries down  
“ the traversing frame and chemically prepared paper or material,  
“ which is thus pressed against the paper or surface to be printed  
“ or marked, producing a colored impression thereon.” The  
Patentee claims “the construction and employment of a self-  
feeding, coloring, and stamping apparatus or press; and,  
secondly, the application of chemically prepared paper or  
material for obtaining colored impressions.”

[Printed, 6*td*.]

A.D. 1853, August 18.—N° 1936.

CURTAIN, WILLIAM.—“ Improved machinery for printing  
“ textile fabrics, oil cloths, leather, paper hangings, and other  
“ similar fabrics or materials.” The machine whereby this is  
“ effected, is composed of three principal parts (vizt.):—First,  
“ the series of blocks on which the pattern is engraved or cut;  
“ second, the colouring apparatus whereby the color is applied  
“ to the block; and, third, the press by which the impression is  
“ transferred from the blocks to the material or fabric to be  
“ printed. The blocks are mounted in a travelling frame, which  
“ is made to run on guides or rails placed on each side of the  
“ machine, so that the blocks may be brought one by one under  
“ the press in their proper order to produce the pattern. The  
“ colouring apparatus consists of a suitable number of troughs  
“ according to the number of colors to be printed, and each of  
“ these troughs is provided underneath with a color roller, over  
“ which passes an endless sheet or blanket, which receives the  
“ color from the color roller, and carries it into or across the  
“ machine, and under the color blocks, which are mounted on  
“ pins at their four corners, and are sustained by means of coiled  
“ springs at each corner, which will also serve to raise the  
“ blocks from the surface of the color cloths when the pressure

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“ is removed. In order to supply the blocks with color they  
“ are brought under rods or pistons, which are made to descend at  
“ the proper moment, and press the blocks on to the surface of  
“ the color troughs, from which the blocks will be raised by the  
“ force of the springs immediately the pressure is removed from  
“ their upper side. The cloth or fabric to be printed is rolled on  
“ a beam or roller, and passed over a printing table, over which  
“ is suspended the platten or pressing surface, and under which  
“ the blocks are successively brought, and when brought into their  
“ proper place over the fabric, the platten of the press is made  
“ to descend, and force the block down on the fabric, and make  
“ an impression thereon. The frame containing the blocks must  
“ then be moved forward until a second block is brought under  
“ the platten, which being made to descend a second time will  
“ press the printing block on to the surface of the fabric, and  
“ produce a second impression thereon, and so on until all the  
“ blocks have been operated upon, when the pattern on the fabric  
“ will be complete. The fabric is then moved forward the length  
“ of the pattern in order to bring a fresh part of the surface under  
“ the press.

[Printed, 1s. 5*½*d.]

A.D. 1853, August 24.—N° 1971.

**POLLARD, GEORGE, and MUMBY, GEORGE.**—“ Improvements in machinery or apparatus for the manufacture of envelopes.” This invention consists, first, “in the general arrangement and construction of machinery or apparatus for effecting the gumming, folding, and stamping of envelopes;” second, “in the application and use of spring ‘presses’ placed inside the plunger, for the purpose of effectually uniting the gummed surfaces of the envelope;” and, thirdly, “the mode of inclining the flaps of partially formed envelopes, by means of springs acting inside the folding box.” “The blank is fed upon the folding box, and when secured in its proper position is gummed on the lower flap; and simultaneously with this operation it is embossed or stamped on the opposite or seal flap, and also on an under flap, with the maker’s name, by means of a suitable embossing press. This being accomplished, the lever which works the moveable bottom of the folding box is held firmly, whilst the folding plunger is forced into the folding box, when

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“ the blank undergoes the first operation of folding. When the  
“ plunger is raised, the incliners (which consist of [blade] springs  
“ placed on each side of the box) coming into operation, give the  
“ necessary inclination to the flaps, and also their respective order  
“ previous to the final descent of the plunger, when, by means of  
“ the internal pressers contained in the plunger, the side flaps are  
“ pressed down upon the gummed surface, thereby securing them  
“ in a proper manner; and the same process also completes the  
“ folding and finishing of the envelope.”

[Printed, 6*d.*.]

A.D. 1853, September 28.—N° 2219.

POOLE, MOSES.—(A communication.)—“ Improvements in the  
“ manufacture of pulp for paper makers.” This invention relates,  
firstly, “to the production of paper pulp from the leaves of the  
“ dwarf palm, straw, and other similar substances.” The pulp  
being produced “is caused to boil for five or six hours with water,  
“ to which one or two per cent. of the sulphuret of an alkali, such  
“ as potassa, soda, or lime, has been previously added. The pulp is  
“ then washed, and it is afterwards acted on during about twenty-  
“ four hours by water, containing one or two per cent. of an acid  
“ that may decompose the sulphuret contained in the pulp, and  
“ allow escape of the sulphur in the state of sulphuretted hydrogen,  
“ which, passing through the pulp as it is formed, acts in some  
“ measure on the colouring matter.” The further bleaching of  
the pulp may be effected by plunging it into “a bath composed  
“ of hypochlorite of lime, potash, soda, or magnesia, in which  
“ bath is also placed small bags containing small pieces of per-  
“ oxide of manganese or other metallic oxide, or other substance  
“ capable of decomposing the hypochlorites into chlorides and  
“ oxygen, which being thus brought into contact with the pulp in  
“ its allotropic form, acts as a most thorough bleaching agent.  
The pulp is then boiled in a lime or alkaline solution; and the  
process of bleaching and boiling is repeated till the pulp becomes  
white.

[Printed, 9*d.*.]

A.D. 1853, September 28.—N° 2222.

JOHNSON, JOHN HENRY.—(A communication from M. Poirier).  
—“ Improvements in machinery or apparatus for cutting paper.”

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This invention relates to "an improved arrangement of mechanism " or machinery for cutting paper, and consists of a stand con- " taining a sliding platform, upon which the paper to be cut " is compressed by a suitable pressing screw. The knife or cutter " is carried in a moveable frame, and is made to traverse longi- " tudinally and simultaneously with the platform, but in an " opposite direction." This may be effected by a rod connecting the knife frame to one end of an oscillating lever, and another rod connecting the platform to the other end, the fulcrum of the lever being placed at an equal distance from either end. When the platform is caused to move in one direction by means of a toothed segment and rack, the lever causes the knife frame to move in the reverse direction, and both are caused to approach each other, their slides being placed at an equal and corresponding oblique angle. " Thus the paper is drawn in one direction, and " the knife or cutter in an opposite one." For the sake of better adjustment of the table to the nature and thickness of the paper to be cut, it may be inclined, and caused to rise and fall by means of an adjusting screw placed on the under side. The cutter, as it wears away, may be readjusted as to weight by means of conical screws and slots which attach it to the frame. The machine, by suitable cams acting through suitable levers on a double-acting clutch box, may be caused to throw itself out of gearing when desired, or to reverse its motion.

[Printed, 6*d.*]

A.D. 1853, October 25.—N° 2463.

NEWTON, ALFRED VINCENT.—(A communication.)—" An " improved construction of printing press." This invention consists chiefly in improvements in type printing apparatus whereby the paper to be printed is fed in a continuous sheet, and afterwards cut into the desired lengths by means of shears. The moveable jaw of the shears is actuated to and from the fixed jaw by a pin eccentrically placed on a wheel working through a bell crank lever.

[Printed, 6*d.*]

A.D. 1853, November 25.—N° 2742.

NICHOL, DAVIDSON.—" Improvements in the manufacture of " envelopes."

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These improvements consist, first, "in cutting the exact form of envelope required direct from a continuous web, or from separate sheets of paper, by means of a cutter, the sides of which are so adapted to the required form, that the pieces or shapes designed to be formed into envelopes may be cut out of or into each other," and thereby "avoiding waste. Any required number of such cutters may be suitably mounted and made to act simultaneously upon the paper so as to cut out the required forms, either separately or in strips of various lengths, the sides of which form such portions of the required forms that they may be perfected by cutting across the strip at certain points." When the webs of paper have to be cut, for the purpose of making envelopes, into sheets, the Patentee employs a knife with a cutting edge so formed as to produce an edge to the paper which will fit to the succeeding cutters without loss of paper.

Secondly, in combining a series of folding apparatus which will operate simultaneously with the preceding series of cutters, whereby the envelopes may be completed and discharged finished by one operation. The blocks or plungers are caused to descend through the frame of the cutters and carry down the cut papers into the box or recess, and the envelopes are there creased and folded by the usual means.

[Printed, 2s. 3½d.]

A. D. 1853, December 5.—N° 2821.

SKILLMAN, BENJAMIN.—(Provisional Protection only.) "An improved mode of preparing sheets of paper suitable for postal communication." "This invention relates to a mode of connecting the cover of a letter with the leaf which contains the communication, the object being to render envelopes available to persons desirous of proving the transmission of their letters through the post. To this end I stamp out the fly leaf of sheets of letter paper, in such a manner as to produce lappets analogous to those of an ordinary envelope, which lappets when folded over (after the leaf which contains the communication has been folded in the ordinary manner of a letter) will form an envelope or case in one piece with the letter which it encloses."

[Printed, 2½d.]

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A.D. 1853, December 6.—N° 2834.

GAINES, WILLIAM EDWARD.—“An improvement in treating or “preparing paper.” “This invention consists of immersing the “paper, in a dry state, into or applying sulphuric acid to the “surface or surfaces of the paper, and quickly removing the acid “by washing in water. For this purpose I take at the rate of “two parts by measure of sulphuric acid of commerce (sp. g. “1·845), and one part of water. This mixture I keep in a closed “vessel till cold, and then, whether the paper be in sheets or a “web, it is (supposing both sides are to be treated) to be quickly “immersed and removed quickly from the acid, and is then to be “immersed in water, to wash off, as perfectly as may be, the acid. “Or, when only one surface is to be treated, the mixture of sul-“phuric acid is to be quickly spread over one surface of the paper, “or the paper may be floated on to the acid, and then the acid is “to be washed off with water.” “Unsized paper, when treated “according to my invention, has a character and appearance given “to it very like parchment, whilst sized paper appears to be more “acted on in respect to the surfaces only, and not so much in the “substance of the paper. The process or treatment also produces “great toughness in the paper, admitting of much handling and “folding without cracking, and may be immersed in water with-“out injury.”

[Printed, 2*d.*.]

A.D. 1853, December 9.—N° 2870.

MORLEY, GIDEON.—(Provisional Protection only.) “Orna-“menting or producing pictures on japanned goods, pannels, “canvas, or other material, whereby a vast amount of artistic “skill and labour is superseded.” “My invention consists in “first painting a sky or back ground suitable for the subject “intended to be produced; and next I print in outline (on “paper), from a copper or other plate, my intended subject in a “suitable color, the same to be transferred on the shadows and “other parts of such outline pictures with transparent or suitable “colours, when I again have recourse to the process of printing “and transferring, using the same colour as employed in the “first printing.” “I then use the body colors and high lights “in suitable places for giving effect.”

[Printed, 2*d.*.]

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A.D. 1853, December 17.—N° 2946.

WHEWELL, ROBERT.—“Improvements in machines used for “cutting paper.” These improvements consist “in the general “arrangement of the parts;” “in the mode of obtaining a com-“pound lateral and vertical movement of the knife;” and also “in the actuating of both the paper holder and knife by one “handle, or by motion obtained from the same first motion shaft.” In this arrangement the knife is caused to descend by means of worm wheels acting into other worm wheels, which actuate the screws to which the knife is attached. These wheels may be suitably placed above the knife, or below the table, when they may be connected to the knife by means of rods. The paper holder is depressed also by means of a screw, but acting separately. The worm wheels may be displaced by bevel gearing, to which is attached reversing gearing. The bevel gearing is put in connection with the screws which actuate both knife and paper holder, whereby both may be brought down simultaneously. When a lateral motion is desired to be given to the knife during its descent, “a “friction bowl” may be placed on one or both ends of the knife bar, “taking into inclined slots, or working against inclined planes “or paths, which may be waved, to give a motion to the knife “from side to side.”

[Printed, 11*½*d.]

A.D. 1853, December 23.—N° 2986.

PFEIFFER, JEAN DANIEL.—“Improvements in machinery or “apparatus for cutting paper and similar materials.” These improvements relate to machinery for cutting the concave and flat edges of books and registers, and consist, first, in the construction of a “circular knife,” and arrangements for cutting concave edges. “The knife is of the form of a portion of a cylinder of equal “radius to that of the concavity of the edge required. The “knife holder is fixed to a toothed sector, having the same centre “of rotation as the blade. The sector is driven by a pinion “keyed to an axle” suitably actuated. A to and fro motion may be imparted to the knife, by means of a “screw receiving “a progressive motion,” or by an “endless helical groove” on a cylindrical block, in which is engaged the end of a stationary screw or stud serving to guide it. The grooved block is fixed to

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the sector, on which is adjusted the knife holder. "The circular motion may be superseded by giving to the blade a lengthened triangular shape," as shown in the drawings.

Secondly, "in the arrangements for cutting the flat edges of books, &c." The books, &c. being properly placed, and held by clamps, the knife is caused to descend with a perpendicular and lateral movement, received from the combined action of a screw, which imparts an oblique movement to the knife, and two radius rods, one end of each being connected to the knife holder and the other ends to the framing.

[Printed, 1s. 2½d.]

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### 1854.

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A.D. 1854, January 18.—Nº 116.

MÉRY, LEON.—(This invention did not proceed, the Law Officer having refused Provisional Protection.)

"The thorough imitation of silk damask, applicable to the fabrication of flocked paper hanging." "This invention consists in brushing in divergent ways, the newly stained paper covered with flock, which can be made either by hand work or by machinery, which machinery the said Leon Méry is the sole and true inventor, and possesses designs thereof, and through which machinery the operation can be done in less than half the time required to print the common stained papers; the said invention being applicable to any kind of designs whatever, generally used in the paper hanging manufactories."

[Printed, 3d.]

A.D. 1854, January 21.—Nº 144.

ROBERTS, RICHARD.—"Improvements in machinery for cutting paper, pasteboard, leather, cloth, and other materials." These improvements consist "in working the presser of machines for cutting paper and other materials by racks and pinions, thereby dispensing with the screw heretofore used for that purpose

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The presser may be retained during the operation of cutting by means of a ratchet wheel and pall jointed to one of the standards.

[Printed, 6d.]

A.D. 1854, February 6.—N° 290.

DUNCAN, ANDREW.—“Improvements in bleaching.” This invention consists “in using the bleaching liquid in a heated “state.” The aqueous solution of chloride of lime or other substance employed as the bleaching agent is artificially heated [in suitable vessels] up to a temperature of 110° of Fahrenheit’s thermometer, or to a temperature not far departing from this point, the exact temperature being somewhat variable with the nature of the fabrics under treatment. “The heated solution is then applied to the materials in the mixing engine, or other suitable “vessel.” Paper, textile fabrics, or other articles may be so treated.

Printed, 7d.]

.D. 1854, February 6.—N° 292.

TRUMBLE, PETER.—“Improvements in paper hangings.” These improvements consist “in the manufacture of paper hangings with oil colours instead of water colours” in the following manner:—“I take the same description of paper as is commonly used by paper stainers, and I [twice] coat or cover the surface thereof with a composition made with the following ingredients,” properly incorporated, “namely, two ounces of the solution of india-rubber, two ounces of tallow, one pint of japan or boiled oil, three quarters of a pound of soap, and two gallons of clear size.” Having thus prepared the paper, “I proceed (in the manner usually practised by grainers on wood) to marble or otherwise ornament the surface of the paper with oil colours composed of the following ingredients, namely, oxichloride of lead or zinc, japan, turpentine, and raw linseed oil, mixed in the ordinary manner to produce the desired colours.” If necessary, a small quantity of sugar of lead may be added to the above colours by which they may be made to dry more quickly.

[Printed, 4d.]

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A.D. 1854, February 9.—N° 316.

BOILEAU, EUGÈNE.—“ Improvements in producing raised “ printing surfaces.” “ The object of this invention is to produce “ plain and colored ornamental designs, chiefly of the kind “ known as checks and plaids, or tartans, upon paper, calico, oil “ and moleskin cloths, and other materials, by the use of types, “ which will admit of being arranged in various ways to produce “ different patterns, but possessing the same general character.” “ In order to produce a raised surface from which to print a plaid “ pattern in one colour I form a type (in the way ordinarily prac- “ ticed by type founders) containing the outer lines of two sides “ of a square, and all the inner lines included in the pattern, and “ by means of repeats of this type I am enabled to produce a “ raised printing surface, the pattern of which may be modified “ according to the taste of the printer by varying the mode of “ arranging the types. To print the same pattern of plaid in “ colours I form types with a given portion of the pattern on “ their surface and other types with another given portion, and “ so on, according to the elaborateness of the pattern and the “ number of colours designed to be reproduced, making the set of “ types represent the complete pattern; and having set up these “ several kinds of type in different chases, but according to one “ given arrangement, I work off so much of the pattern as each “ contains in different colours on the same material, whereby I “ reproduce the complete pattern in various colours, as desired.” “ In color printing a more brilliant effect than heretofore may be “ thus obtained, inasmuch as the colors may be applied without “ crossing each other; and thus each color will throughout its “ surface retain its primitive appearance.”

[Printed, 1s. 2d.]

A.D. 1854, February 13.—N° 347.

COX, JAMES.—“ Improvements in knives for cutting paper and “ other materials.” The improved knife is so formed that “ an “ angled cut is effected vertically throughout the entire pile of “ paper.” The cutting edges are “ in three vertical planes,” as shewn in the drawing. The principal application of this cutter is “ for the purpose of cutting out blanks to be used in the manu- “ facture of bags.”

[Printed, 9d.]

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A.D. 1854, February 20.—Nº 399.

PREVET, RENÉ CHARLES JULES.—(Provisional Protection only.) “Improvements in treating textile plants for obtaining “pulp for manufacturing paper.” “For separating the fibre of “the plant I employ American potash, salts of soda, lime, and “sulphuric acid; for bleaching it, I make use of nitric and muri-“atic acids, chloride of lime, oxide of manganese, alum, carbonate “of soda, and sulphurous oxide.” The apparatus employed con-“sists “of vats placed to receive the steam, cylindrical hammers, “conveniently arranged for opening, bruising, and crushing the “fibres, and vats for bleaching suitably disposed.”

[Printed, 3d.]

A.D. 1854, March 11.—Nº 594.

ASTON, JAMES JONES.—“Improvements in the construction “of envelopes.”

These improvements consist “in the construction of an en-“velope with such a tongue or similar part attached to one of its “flaps, and with such a hole or slit through or in the other three “flaps, and so formed that the tongue may be introduced or “passed through such hole or slit into the interior of the envelope “and turned under parts of such three flaps, and under a part of “such tongue flap,” and be there secured by gum or otherwise. The envelope may be of the usual form with the addition to the flap usually called the seal flap of a projecting piece called the “tongue.” This tongue may be suitably gummed, bent back, and inserted through slits cut in the other flaps. As the object of this invention is to render more difficult and hazardous the fraudulent opening of letters, the Patentee proposes to add colour to the tongue, which will mark off if excessive moisture be applied; or a figure or device may be applied to the tongue for a similar object.

[Printed, 10d.]

A.D. 1854, May 4.—Nº 998.

MEE, CORNELIA.—(Provisional Protection only.) “An improved “foundation for working out ornamental designs or patterns.” “I propose to print on paper or other suitable material, a series of “squares of any size, but so arranged that every square printed

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" thereon shall break joint (horizontally or vertically) equidistant  
" with the other squares (as shown in the drawing). On this  
" foundation, ornamental designs of any description may be drawn  
" or shaded, and covered with various coloured bead work or any  
" other suitable material."

[Printed, 5x.]

A.D. 1854, May 5.—Nº 1006,

HASELER, EDWIN.—“An improvement or improvements in  
“ ornamenting metals, paper mâché, horn, and shell.” These  
improvements consist in “ornamenting the surface of metals,  
“ papier mâché, horn, and shell by the methods herein described;  
“ that is to say, by printing on or transferring to the said surfaces  
“ ‘negative’ designs, that is to say, designs representing those  
“ portions which in the completed ornament shall consist of the un-  
“ covered surface of the material to which the ornament is applied;  
“ and afterwards gilding, silvering, bronzing, colouring, or treat-  
“ ing by acids or other chemical agents, the surface to which the  
“ said ‘negative’ design has been applied; and finally, removing  
“ the said ‘negative’ design by means of a solvent, so as to leave  
“ those portions of the surface unaffected which were covered  
“ with the negative design.” “I print on the surface to be  
“ ornamented, or upon ‘tissue or transfer paper,’ either from the  
“ copper-plate, stone, or block, the pattern called the negative.”  
The impression thus obtained may be transferred to the object to  
be ornamented by rubbing or pressure. The paper is then  
removed or washed off. The surface of the article to be orna-  
mented is then prepared suitably to receive the gold or silver leaf,  
or bronze, or colour. “I afterwards warm the article and apply  
“ oil of turpentine, or volatile oil of tar, or such other solvent as  
“ will dissolve the matter of which the printed design is composed;  
“ the gold, silver, or bronze is thus left on the surface to be  
“ ornamented in all those places uncovered by the printed de-  
“ sign.” The colour or ink employed for this purpose may be  
prepared from “linseed oil, heated until it acquires the thickness  
“ of treacle,” mixed with “lampblack;” or, when the design is  
printed from the copper-plate, it may be composed of “boiled  
“ linseed” and “rape oils” mixed, to which is added “oil of  
“ umber,” “vandyke brown,” and “white lead, sufficient to give

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“ the mixture a color agreeable to work with.” Or, when the “ negative ” is printed on a “ metallic surface ” the gilding, silvering, &c., may be effected by electrical deposition; or the surface of the exposed metal may be ornamented by the action of acids or liquids, capable of acting chemically and producing thereby a “ crystalline or marbled effect.”

[Printed, 4d.]

A.D. 1854, May 10.—N° 1040.

SPARRE, PEHR AMBJORN.—“ An improved mode of preventing “ the alteration or falsification of written documents.” The improved mode consists in “ the covering the surface of the paper “ (or such portion of the paper as is to be written upon), with a “ design printed in two colors, alternating in close succession, one “ of the said colors being indelible, and the other color to be of “ such nature that it can be easily discharged from the paper.” “ The indelible ink or color which I prefer to employ is com- “ posed of Paris blue or lamp black, ground with very hard boiled “ linseed oil or nut oil; and the delible ink may be composed of “ cochenille or of common writing ink, dried and pulverized, and “ ground with very slightly boiled oil, or with water thickened “ with gum or plaster of Paris.” “ The printing may be performed “ by Congreve’s process, or by any other suitable means.”

[Printed, 3d.]

A.D. 1854, May 18.—N° 1117.

GUICHARD, EDOUARD AUGUSTE DESIRÉ.—“ Improvements “ in the manufacture of ornamental fabrics for decorating walls or “ other surfaces.”

This invention consists in “ the production of ornamental de- signs upon paper hangings by the employment of pulverized “ freestone, sand, metals, or metallic salts; sawdust of all kinds “ of wood, or shavings or cuttings reduced to fragments of greater “ or less fineness; paper reduced to powder, either by rasping or “ by trituration; talc, mica, or other similar mineral substances, “ either alone or in combination with other matters; hemp and “ other textile substances; bran, straw, mosses, marine plants, “ lichens, and tan; also whalebone shavings or cuttings reduced

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“ to powder, or whalebone raspings; and, lastly, baked earths of “ all kinds also reduced to powder. These various substances “ may either be employed separately, or two or more of them “ combined in any required proportions, and dyed or stained “ either before or after being reduced to powder.” To be applied after the manner ordinarily employed for the manufacture of flock paper.

[Printed, 4d.]

A.D. 1854, May 23.—Nº 1143.

**ATLEE, THOMAS WILLIAM, and ATLEE, GEORGE JOBSON.**—“ Improvements in printed or other forms applicable for bankers’ cheques, orders for goods, wharfingers and carriers’ receipts, taxes and rates, collectors’ receipts, and various other parochial, commercial or private purposes, whether such forms be bound up into books or not.” This invention consists, “in perforating [by suitable means] printed and other forms, such as are named in the title, when such forms are required to be separated, for the purpose of leaving or preserving a check or evidence of the business matter to which such torn off forms may relate. Such perforation may be in one or more straight, undulating, or zig-zag lines, or in any pattern that will admit of being easily torn asunder. We do not confine ourselves to the precise form in which such perforations may be made, as they may be round, diamond, square, or any other. And should it be further necessary, as a prevention to imposition, such as in excursion, return, or other railway tickets, such tickets may be perforated, so as to readily indicate the peculiar character of their issue.”

[Printed, 3d.]

A.D. 1854, May 30.—Nº 1194.

**BELLFORD, AUGUSTE EDOUARD LORADOUX.**—(A communication.)—“ Improvements in machinery for making bags of paper or other suitable material.” This invention relates to an apparatus or machine for “making bags” from paper or other material “which takes in a roll of paper or other suitable material, and deliver bags in a finished state, dried, and having printed upon them any desired trade mark, or other device or inscription.” “The printing of the bag is performed during its movement from the bot-

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“ tom pasting and lapping apparatus to the side pasting and lapping apparatus, by means of a type cylinder, which has a shaft working in bearings in the sides of a light framing erected on the bed plate, and which stands between the tapes and the apron.” The printing cylinder is driven by gearing at the same speed as the bag, and is inked by rollers. “The pressure necessary to produce the impression is given by a pressure roller above the type cylinder, the impression being given to the under side of the bag.”

[Printed, 1s. 6d.]

A.D. 1854, June 6.—N<sup>o</sup> 1256.

ATKINSON, DAVID.—“Improvements in printing, and in the machinery or apparatus to be employed therein or connected therewith.”

The Patentee claims, “first, the general construction and arrangement of the lithographic or transfer printing machinery, and the apparatus employed therewith.” “Second, the system or mode of printing designs or letter-press on a continuous web of paper or other fabric; from ‘transfers’ laid on or from writing or designs drafted on to a cylindrical surface, in place of on a plane surface, as in ordinary lithographic or zincographic printing.” “And, thirdly, the application and use of the cutting apparatus, in conjunction with my improved printing machine.”

“The paper, calico, or other fabric which is to be printed is first placed on a roller, and from thence passed between an upper roller (which has previously had the design or letter-press drafted or transmitted on to it) and a lower roller (the bowl) covered with flannel or any other flexible or elastic material. “The paper or other fabric, having by the above means received the required impression, if intended to be used in short lengths, is then passed under a cutter, placed at a proper distance, which is caused to descend at any required time, and to cut off the paper into any number of lengths that may be necessary, and is finally passed into a convenient receiving box, thus accomplishing the whole process by one machine. The machine is fitted with a self-inking apparatus, and is capable of printing a sheet of any size in several colors at one time.”

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The colour is supplied by furnishing rollers to the printing cylinder. Another roller, also working against the printing cylinder, covered with a soft material and wetted with water, keeps the printing surface in a proper moistened state.

[Printed, 10d.]

A.D. 1854, June 17.—Nº 1321.

**FOURDRINIER, JOSEPH.**—“Improvements in machinery for “washing, boiling, cleaning, and bleaching rags, fabrics, and “textile substances.” “This invention consists of constructing “a vessel, by preference of a cylindrical form, closed at each end, “and mounted on hollow axles. On the interior near each end, “is fixed a sieve of fine wire cloth, or other suitable matter. The “vessel is provided with a manhole or manholes, for charging “and discharging the materials into and from the vessel. To the “two hollow axles of the vessel a pipe with branches is connected, “by which water, or washing, or dyeing liquids can be caused “to flow into either end of the vessel and away at the other end. “In the interior of the vessel are a number of spheres, which, by “the rotation of the vessel, cause the matters under process to be “beaten and pressed; and in order to cause the fluids to boil, “steam pipes or a jacket or both, are used.” In the interior of the vessel are placed several shelves or ledges “and their object “is to carry up the spheres or beaters, and to allow them to fall “off when the shelves or ledges are moving upwards, and they “thus beat and roll on the rags or other matters which for the “time being are in the vessel.”

[Printed, 8d.]

A.D. 1854, June 22.—Nº 1366.

**STIDOLPH, WILLIAM.**—(Provisional Protection only.) “A “transferable book marker.” “This invention consists of a “method or methods of constructing a book-marker, and of com-“bining the same with a paper-cutter. To construct my book-“marker, I take a narrow flat piece of metal, or any suitable “elastic material, such as horn, or the hardened vulcanized india-“rubber manufactured and patented by Charles Goodyear; I “bend this narrow slip of metal or elastic material double, so as “to form a spring, which is intended to clasp the cover, back, or

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“ leaves of a book. At the bend of this spring I attach one or  
“ more ribbons or strings, which is used as book-markers, between  
“ the leaves, in the same manner as the strings or ribbons usually  
“ attached to the backs of prayer books or bibles.”

[Printed, 3d.]

A.D. 1854, June 24.—Nº 1393.

LIGHTBOWN, HENRY.—(Provisional Protection only.) “Im-  
“ provements in drying pulp in the mannfacture of paper, also  
“ paper hangings and printed textile fabrics.” “My improve-  
“ ments consist in causing the materials to be dried to pass over a  
“ plate or series of plates or chambers, heated by a number of jets  
“ of gas; the apparatus may be adapted immediately to the paper  
“ making or printing machine, or it may be separate therefrom,  
“ and the drying process constitute a distinct operation.

“ The materials I cause, by suitable mechanism, to travel at a  
“ quicker or slower rate, according to the drying required, and  
“ the heating of the plates I also regulate by consuming more or  
“ less gas.”

[Printed, 3d.]

A.D. 1854, June 27.—Nº 1415.

ANTROBUS, RICHARD LEICESTER.—“A new or improved  
“ method of printing oil cloth for floor and table covers, paper  
“ hangings, and other surfaces.” This invention consists in the  
“ construction of a machine for printing oil cloth, paper hang-  
“ ings, and other surfaces.”

The machine consists of a “series of pairs of rolls (geared  
“ together), there being as many pairs of rolls as there are colors  
“ to be printed; the said rolls are supported by and work in  
“ suitable framing. The lower roll of each pair of rolls is plain;  
“ the upper roll of each pair is engraved with that portion of the  
“ pattern which is to be printed in the colour to which the said  
“ roll is devoted, the said pattern being in relief.” “Over each  
“ pair of rolls is situated an inking or coloring roll, & over the  
“ said inking or coloring rolls are troughs for containing the  
“ colour to be printed.” “A slit extends from end to end in the  
“ bottom of each of the troughs, through which slits the color  
“ passes to the brushes, by which brushes the said colors are

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" delivered on to the inking or coloring rolls." A reciprocating motion may be given to the troughs. "The bearings of the printing rolls are capable of a vertical motion, whereby the said rolls may be raised for the purpose of arresting the printing," which is effected by an inclined plane passing under the bearings of the rollers. Discs [box wheels] are attached to the ends of the rollers. One large roll [a bowl] may be substituted in place of the several plain rolls referred to.

[Printed, 6d.]

A.D. 1854, June 27.—N° 1416.

**MORGAN, WILLIAM.**—"Improvements in machines for cutting paper, card, and millboards, woollens, veneers, and materials used in making paper, part of which improvements are applicable to other machines where quick and slow motions are used and where machinery is required to be thrown into and out of gear." The knife of this machine receives a lateral movement by means of two or more radius rods; the attachments of the ends of these radius rods to the framing may in one case be at the top of the framing, and in the case of the other rod at the under part of the framing. By this means the knife is guided above and below. The perpendicular movement of the knife is imparted by a short link, attached at one end to the knife carrier, and centred at the other end in the double eye of a screw, which is caused to travel upwards and downwards in a dovetail slide by means of reversing speed gearing; the wheels being calculated to give a slow or quick descending motion to the knife, as required, and a quick ascending motion. The reversing of the gearing, and consequently the length of the stroke, is regulated by a suitable lever and tappets. The table is suitably supplied with a guage and guide rod, and indicator, and the "follower" is put down with a screw, actuated by hand.

The Patentee further proposes to give to the knife its up-and-down movement, by substituting for the link and screw, in the former case, a horizontal screw carried across the machine, working into four jointed rods acting as toggle joints; or by means of a screw and excentric worm wheel; or by two or four excentric cog wheels and connecting rods; or by differential screws or left and right-handed screws in combination; or by hydraulie power suit.

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ably applied. The Patentee shows a mode of applying radius rods to a small hand cutting apparatus; also, an additional moveable gauge, adjustable on the table by screws; also, the mode of reversing gearing by surface friction, or by an inclined plane, both being suitably actuated by tappets or levers, instead of the ordinary clutch.

[Printed, 1s. 5d.]

A.D. 1854, July 5.—N° 1478.

VENABLES, JOHN, and MANN, ARTHUR.—(Provisional Protection only.) "Printing self and other colors, in bas-relief or " raised work, on china, earthenware, glass, parian, stoneware, " bricks, blocks, tiles, quarries, hardware, japan, and papier " maché ware." "We take plates of wood, stone, metal, or " other hard material, and carve or engrave them much deeper " and broader than has hitherto been in use, by which means " we get a much greater body of the matter used, and so pro- " duce the bas-relief or raised work upon the articles to " which the same is applied. We afterwards rub into the said " plates the self or other colors to be printed and transferred on " the above-named wares, until the carved or engraved parts are " filled with the same. We then lay a soft fabric of paper or " cloth upon the plates, and subject the same to a degree of pres- " sure, by which means the self or other colors are deposited on " such fabric. The fabric, with the pattern or device thereon, is " then laid upon the ware and gently rubbed, whereby the pattern " or device is transferred and fixed upon the ware in bas-relief or " raised work."

[Printed, 3d.]

A.D. 1854, July 6.—N° 1484.

LAMB, JOHN.—"Improvements applicable to machines for cut- " ting paper." These improvements consist "in collecting paper " (after it has been cut to the required size by the ordinary ma- " chinery for cutting paper) by self-acting mechanical agents." The paper, after being cut longitudinally and transversely, is pro- gressed forward between guide partitions, by means of a travelling endless cloth, and deposited on a platform which may be suitably divided by partitions, to adapt it to the various sizes of paper,

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The platform may be elevated and depressed, as the cut paper accumulates, by means of a rack and pinion underneath. The pinion receives its motion from an eccentric and lever acting through a pall and ratchet wheel. The platform is guided in its perpendicular motion by means of spindles at each corner working in sockets.

[Printed, 10d.]

A.D. 1854, July 12.—Nº 1522.

GATTY, FREDERICK ALBERT.—(Provisional Protection only.) “An improvement in the manufacture of printed receipt stamps.” This invention consists “in applying such colours for the printing “of receipt stamps as will change, disappear, or efface when “treated with acids or other chemical agents. The colours “which I recommend are lead, orange, ultramarine blue, or “some other colours of the same kind, mixed with glue or “gummy substances, without any varnish or oily substance.”

[Printed, 8d.]

A.D. 1854, July 18.—Nº 1575.

ARCHER, CHARLES MAYBURY.—(Provisional Protection only.) “Removing printing or writing from paper.” The paper, “say the ‘Times’ or any other newspaper, or any book,” is immersed for a given period “in a bath or solution of pure “sulphuric or other acid,” and then into “a bath of pure “spring water or other water, cold, or into hot water for a short “period,” and, lastly, into a bath “of spirits of ammonia or “other alkali.” The process may be expedited “by the passing “of a soft brush over both sides of the paper.” Paper so discharged of its ink may be pressed and used again; or it may be re-converted into pulp and formed into paper again. The Patentee also claims “the use and application of the residual “products.”

[Printed, 8d.]

A.D. 1854, July 26.—Nº 1637.

LAMACRAFT, JOHN.—(Provisional Protection only.) “Improvements in envelopes, or means for securing letters, notes, “and similar documents.” “I propose to cut or punch a piece “of paper or other material in such manner that, on the two sides

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" and bottom being overlapped, a perforation will be left through  
" all three; these are made to adhere by the manufacture. The  
" lap is left loose, as now, and is made in the shape of the flap of  
" a pocket-book, or nearly so. The point or tongue, being pro-  
" vided with adhesive substance both on its outer and inner sur-  
" faces, is (when brought into use) damped or wetted, and inserted  
" into the perforation aforesaid. The tongue will adhere both to  
" the letter and inside of the envelope, and thus most effectually  
" secure the contents of the letter, and denote any infraction of  
" the covering with certainty."

[Printed, 8d.]

A.D. 1854, August 5.—Nº 1721.

GATHERCOLE, JAMES.—(Provisional Protection only.) " Improvements in bordering or producing devices upon the edges of envelopes, letter paper, or other articles of stationery." " The object of this invention is to substitute, for the [present] crude and imperfect process, the ordinary printing process, by which the whole of the parts of the envelope or paper intended to be bordered have the color printed on them by a single operation in a most effective manner. The color may either be printed in one line only, such line being wider or narrower, to indicate the different degrees of mourning; that of two lines, a lesser degree, and one line being an indication of slight mourning only," or with an ornamental device in mourning or other colours. The device on the seal or letter press may be applied at the same time.

[Printed, 8d.]

A.D. 1854, August 8.—Nº 1737.

WHITE, CHARLES.—(Provisional Protection only.) " Improvements in printing blocks for printing ornamental or decorative paper." " I propose in making my block to use one piece of wood only in thickness, and instead of the block being one square piece or surface, by having several narrow or broader slips (according to the size of the pattern to be printed), attached together in any simple manner, so that the several slips, or any one of them, can be removed, or transposed and re-arranged, to form different patterns,"

[Printed, 8d.]

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A.D. 1854, September 2.—N° 1916.

EDWARDS, HEZEKIAH, and HODSON, JAMES.—(Provisional Protection only.) “ Improvements in the formation of envelopes.” “ The peculiarity of our said invention consists in forming envelopes like a paper bag, having one side open, the interior edge of which has an adhesive coating, which, being wetted after inserting the intended inclosure, is secured by pressing such damped adhesive edges together; or the same may have two openings or be in sheets, prepared for the requisite form to be used as envelopes. We sometimes prepare these envelopes with a fly leaf for writing upon, which may be folded up, and, entering the opening of the envelopes, is closed by damping and pressing the opposite gummed or sized edges.”

[Printed, 8d.]

A.D. 1854, September 5.—N° 1939.

TRAPPES, HENRY.—(A communication.)—(Provisional Protection only.) “ A process for the preparation of leather, to be used in the manufacture of a new flock, and for the manufacture of the same, to be used and applied in lieu of flock made from pounded or ground wool and woollen materials, heretofore commonly used in the manufacture of painted, printed, and dyed decorating papers, carpets, oilcloths, and other things; and also to be used as a paste or pulp for the manufacture of all kinds of paper, parchment, and pasteboard, of toys, of ornamental and other picture frames, of mouldings, architectural and sculptural ornaments, and other things.” The process consists in grinding leather to very fine powder by means of grinding mills. The powder so formed may be bleached and dyed.

[Printed, 8d.]

A.D. 1854, September 26.—N° 2071.

SINCLAIR, Honourable JAMES, commonly called LORD BERRIEDALE.—“ Improvements in treating, cleansing, and ornamenting paper and other surfaces.” This invention consists, “ first, in the application and use of rollers or rotating parts, carrying strips of caoutchouc or other soft and elastic substances for the purpose of treating, cleansing, ornamenting, finishing, and

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" polishing paper, woven fabrics, leather, yarns, threads, and other surfaces by the frictional contact therewith of the caoutchouc composing such rollers." " Second, in the system or mode of cleansing or removing coloring matter from paper and other surfaces by the action of rotating caoutchouc or elastic edge or surface pieces." The rotating parts or rollers with caoutchouc slips, are composed of wood or any other suitable material, into the peripheries of which are inserted the edges "of a number of slips of vulcanized caoutchouc or other soft or elastic material," As the roller or rollers revolve at a high speed, the slips of caoutchouc act as flappers or beaters and polishers of the material or colour acted on. Such polishers may be applied to remove superfluous colour powder from the surface of printed or coloured fabrics, paper, leather for book covers, &c.; to the finishing of paper and other surfaces, and to thread, thereby improving their general effect. Woven goods and ladies dresses may also be similarly treated.

[Printed, 1s. 4d.]

A.D. 1854, October 21.—N<sup>o</sup> 2251.

GREEN, WILLIAM, and PICKETT, JOSEPH.—" Improvements in treating or ornamenting textile materials or fabrics and paper, and in machinery or apparatus for effecting the same." These improvements consist, first, "in producing upon continuous lengths of paper effects similar to those which on silk goods are designated 'watered' and 'shot,' by means of printing [by rollers or blocks furnished by inking rollers] with gold size or other adhesive matter a series of fine lines, either curved or straight, and applying thereto metallic powder or other dry colours." "The paper may afterwards be embossed."

The appearance of "jacquard work" may be imitated by printing a series of lines and dots, corresponding in size, &c. to those portions of the warp or weft which are thrown up by the weaving operation upon the surface.

The material may be printed with a substance which will become adhesive by the application of heat or moisture. "The desired pattern or design may then be produced in metal or in color upon materials so printed on the application of heat or moisture upon those portions only where the said metal or color

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" is required." The metallic powder may be applied to the material by means of a " cold plain roller " covered with cloth, or by an engraved roller.

" Watered " effects may be produced by passing the paper, &c. under pressure between ribbed surfaces; two endless bands of india-rubber being preferred for that purpose. Thin textile fabrics may be covered on both sides with flock, or other fibrous dust, by first saturating them with suitable adhesive matter, then applying the flock, &c. in the usual way, and then pressing the material between rollers.

The Patentee's machine for applying the flock or dust to the fabrics, paper, &c., and thereafter printing them with colors, consists of an engraved roller suitably supplied with adhesive matter which prints the desired pattern. The material so printed passes in an inclined direction under a box with a perforated bottom containing the flock, which is vibrated by a cam. A series of rods are caused by means of cams to beat the fabric with the flock on it. If the material requires to be perfected by the further application of colors, it is then caused to pass through a roller printing machine. When metallic or other expensive colours are to be printed the apparatus is modified by the addition of revolving brushes.

This invention consists, lastly, "in lacquering metallized fabrics " or materials and paper by means of rollers " "working in a " trough containing lacquer " "or by other mechanical means."

[Printed, 11d.]

A.D. 1854, October 26.—Nº 2286.

FONTAINEMOREAU, PETER ARMAND le Comte de.—(A communication from Muller, Leopold, and Widl, Antoine.) Provisional Protection only.) " Improvements in transferring colored " pictures, portraits, and engravings." " By means of a litho- " graphic process I obtain an exact outline of the subject to be " transferred on paper, which can then be transferred either upon " paper, stone, glass, leather, metal, wood, or any other sub- " stance; and by submitting this to a litho-chromic operation, " I obtain the coloured reproduction of the object."

[Printed, 8d.]

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A.D. 1854, November 8.—N° 2366.

SIEMENS, CHARLES WILLIAM.—“Improvements in electric “telegraphs.” This invention relates, in the first place, to improvements in electrical apparatus for transmitting signals; and, in the second place, to the “preparing strips of paper or other “suitable material for effecting the transmission of signals or “messages by electro-magnetic telegraphs, by perforating the “same with various combinations of single holes and double “holes in lieu of combinations of short and elongated holes;” and also, “the constructing machinery for perforating paper or “other suitable material for telegraphic purposes with two punches “so arranged that one or both may be simultaneously depressed, “combined with suitable machinery for advancing the paper.” There are three levers called “keys,” either of which, on being depressed by the finger or otherwise, and again elevated by springs, causes the drum which actuates the paper to be punched to move forward a tooth, by means of spring catches and ratchet wheels. Two of the key levers on being depressed also actuate downwards the required slide spring punches, which perforate the paper underneath, and, on being elevated by springs cause the paper to move on as stated; the third key lever on being depressed merely actuates the paper by means of the drum referred to, thereby causing a space unperforated to be left on the paper which will thereby mark the termination of a word represented by the punched holes.

[Printed, 11d.]

A.D. 1854, December 11.—N° 2607.

BEMROSE, WILLIAM, the younger, and BEMROSE, HENRY HOWE.—“Improvements in the mode of, and machinery for, “punching and perforating paper and other substances.” This invention consists “in the system or mode of punching or perforating sheets of paper, cardboard, parchment, or other similar “materials, by the aid of rotatory, punching, or perforating “cylinders or rollers, in conjunction with corresponding counter-“part cylinders or rollers, for the purpose of facilitating the “subsequent division of such sheets, or for ornamenting the “same.” The punches to produce holes, or knife edges to produce cuts or perforations, are placed on the peripheries of a cylinder,

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which is caused to revolve in contact with another roller, in which are holes corresponding to the punches, or a slit to correspond with the knife edges. The sheets of paper, &c. are caused to pass between these rollers.

[Printed, 7d.]

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A.D. 1855, January 3.—N° 22.

VENABLES, JOHN, and MANN, ARTHUR.—“Improvements in “producing raised figures or ornaments upon the surfaces of “articles made of metal, pottery, and earthenware, glass, papier “mâché, and other materials.” These improvements may be effected by engraving to a suitable depth a plate of metal, stone, &c. with the design required; furnishing this plate with suitable oily or gummy composition, which when transferred by pressure to paper or other such substance will leave the engraving, and adhere to the paper. The paper so printed with raised impressions may then be applied by pressure to the surface of the article desired to be ornamented, after which the paper may be removed by washing, burning, or otherwise, leaving the design or ornament on the article in relief.

[Printed, 4d.]

A.D. 1855, January 5.—N° 32.

LIVESEY, JOHN.—(A communication.)—“Improvements in “printing, and in the materials and apparatus connected therewith.” This invention consists of an improved construction and arrangement of self-inking apparatus, applicable either to typographic, lithographic, sincographic, or other printing machines; of improvements in lithographic printing machines, whereby large sized transfer rollers composed of segments may be employed; in the employment of transfer rollers constructed of zinc plates, or segments of wood secured to a suitable frame, and having stereotype casts attached thereto; and in improvements in the construc-

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tion of damping rollers, and in the composition of the ink employed.

Fifthly, to a "peculiar construction and arrangement of rotatory cutting apparatus, for cutting or dividing continuous lengths, or webbs of printed fabric into sheets of the required size." The webs to be cut are passed between two revolving rollers, and on the surface of the under one is fixed a transverse knife, which cuts the paper at each revolution of the roller into sheets, of the length corresponding to the circumference of the roller. The upper roller may be made of lead.

Lastly, the Patentee claims "the mode of facilitating the obtaining of transfers from old engravings or prints," by soaking them in a solution composed of three ounces distilled water, one ounce of caustic potash, and one quarter of an ounce of essence of lavender, for five minutes, more or less. The engraving so soaked is then placed between folds of blotting paper, and afterwards pressed on to the surface of the lithographic stone or zinc plate slightly heated.

[Printed, 1s. 4d.]

A.D. 1855, January 26.—N° 196.

LAMACRAFT, JOHN.—"Improvements in envelopes, or means for securing letters, notes, and similar documents." The novelty claimed in this invention consists in forming the seal flap with an extra tongue or lappet, and the other three flaps with each a slit or perforation. In closing the envelope the tongue or lappet is thrust through the apertures, and there suitably fixed by gum on one or both sides.

[Printed, 5d.]

A:D. 1855, January 27.—N° 210.

DAVIS, ELIAS.—(Provisional Protection only.) "Improvements in rendering paper waterproof." "I apply the waterproofing materials in thin sheets or solutions thereof in suitable spirits or oils, and, when requisite, subject the paper so prepared to stoving, rolling, or pressing; solutions may be composed in the proportions of about two parts india-rubber, one part gutta percha, and two parts rectified spirits or other solvents."

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“ The water-proofing material may be applied to one or both sides of single sheets of paper, or made to penetrate the substance of the paper, or two or more sheets so prepared made to adhere by pressure.

“ Papers prepared according to my process may be used for roofing, ships' sheathing, wall papers, cartridges, bookbinding, boxes, envelopes, and other useful purposes.”

[Printed, 8d.]

A.D. 1855, January 29.—N<sup>o</sup> 224.

**PICHOT, ALPHONSE.**—(Provisional Protection only.) “ Improvements in postage paper and envelopes.” These improvements consist, “ first, in uniting the envelope with the letter, note, or parcel, so that the dates, postage marks, &c., may easily be preserved, and record of them kept along with the letter.” “ A second or internal seal” may be applied to such letters as have the envelopes appended to them. The loss of loose papers enclosed may be prevented by “ doubling up” the interior letter; also “ by nicking one or more corners of the square.” Any suitable face of the bag or envelope may be printed with a “ blank list of bank notes, &c.” The part of the envelope on which the wax is put may be made like “ filigree or lace work,” so that the sealing matter may thoroughly penetrate. The weight of the envelope and all printed papers may be printed on them to avoid mistakes as to the proper amount of postage stamps to be applied. The envelopes may be “ ruled, embossed, and divided into proper spaces” to make the “ superscribing, stamping,” &c., more regular. To effect “ a more perfect sealing” an “ adhesive seal or embossed label” may be applied to the filigree seal part of the letters and envelopes.

[Printed, 8d.]

A.D. 1855, February 6.—N<sup>o</sup> 276.

**TRAPPES, HENRY.**—(Provisional Protection only.) “ A process for the preparation of leather to be used in the manufacture of a new flock, and for the manufacture of the same, to be used and applied in lieu of flock made from pounded or ground wool and woollen materials heretofore commonly used in the manufacture of painted, printed, and dyed decorating papers, carpets, oil-

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" cloths, and other things ; and also to be used as a paste or pulp  
" for the manufacture of all kinds of paper, parchment, and  
" pasteboard, of toys, of ornamental and other picture frames, of  
" mouldings, architectural and sculptural ornaments, and other  
" things."

This invention appears to be a repetition of that patented by  
the same Patentee, A.D. 1854, September 5,—N° 1939.

[Printed, 3d.]

A.D. 1855, February 10.—N° 320.

BELLFORD, AUGUSTE EDOUARD LORADOUX.—(A communication from Kuhlmann, Frederic.)—" Matériaux to be used for  
" cementing and painting, and also applicable to printing and  
" dressing or finishing fabrics." This invention consists, first,  
" in substituting the solutions of silicate of soda or of potash for  
" oil, essence, glue, &c. for any kind of painting, printing, var-  
" nishing, and gilding on any kind of subject or object, and using  
" for these paints artificial or natural sulphate of barytes, to be  
" applied in many cases as substitutes for white lead and zinc  
" white." Second, in fixing in the cold state paints, enamels,  
varnishes, and gilding upon porcelain and glass ; or fixing one  
sheet of glass to another ; or joining the pieces or panes of glass  
edgeways by means of the above-silicates. The Patentee proposes  
also to make hydraulic and other cements by adding " lime and  
" some silicious matter," to " silicates obtained by the dry pro-  
cess [prepared in a reverberatory furnace] ;" also to make inks  
by the addition of soluble silicates ; also its use as the gummy or  
adhesive matter for attaching flock, sand, or emery to paper or  
fabrics ; or for printing and fixing pigments on fabrics ; or for  
finishing fabrics, and stiffening paper, which will render them very  
water tight, and more substantial ; also for fixing colours or  
colourless oxides absorbed in dying calcareous stones by means of  
an alkaline silicate. Lastly, the use of hydro-fluosilicic acid for  
hardening calcareous stones, or for fixing the potash that is con-  
tained in stones that have been hardened by the application of  
silicate of potash ; or else for merely rendering insoluble the  
silicious colours after they have been applied.

[Printed, 4d.]

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A.D. 1855, February 16.—N° 348.

CARLESS, EUGÈNE.—“Improvements in the manufacture of “paper cloth, known as artificial leather, and in coating or covering the surface thereof with coloring matter, said coloring process being also adapted to the coloring or staining of paper.” The Patentee claims the manufacture of “paper cloth” by the “mechanical means” as described; and, also, “the use or application of brushes revolving or moving in an horizontal direction over a table or other plane surface, for the purpose of “coloring or staining paper or paper cloth.” The paper and cloth are wound on separate rolls. The cloth, supposing it to be pasted and not the paper, is caused to pass in a continuous manner under a paste trough where its surface is supplied with paste, and between a pair of rollers to equalize the paste, and over a stretching roller; it then meets the sheet of paper, with which it passes in contact under a rail, and through a pair of pressure rollers heated or otherwise which squeezes out the superfluous paste and causes perfect adhesion of the cloth to the paper. The united web is then caused to pass over and round drying cylinders, between which may be placed a colour trough and furnishing roller to apply colour to the face of the web, and a table over which are placed a series of soft brushes, to which rapid horizontal circular motion is imparted by means of cranks. The web then passes on and is enamelled by the usual apparatus for that purpose, and finally glazed between calendering rollers.

[Printed, 10d.]

A.D. 1855, March 14.—N° 566.

GRAY, HENRY.—(Provisional Protection only.) “Manufacturing from vegetable substances a material which can be applied to all adhesive surfaces for either useful or ornamental purposes, “as a substitute for and in the same manner as flock is now used “or applied on adhesive surfaces.” “The said material is made “from wood dust, or any other vegetable fibrous substance, by “drying, and grinding and pulverising the same to various degrees of fineness, as required, so as to represent flock made from “wool, and then the same may be used either in its natural “colour, or it may be dyed of any color by any of the ordinary

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“ processes now in use or dyeing vegetable substances, and  
“ applied to adhesive surfaces in the manufacture of linen, muslin,  
“ calico, or paper hangings, or fabrics, show cards or boards,  
“ labels, and other similar manufactures, in the same manner and  
“ for the same purposes as woollen flock is now used or applied.”

[Printed, 3d.]

A.D. 1855, April 19.—N° 867.

BISHOP, WILLIAM.—(Provisional Protection only.) “An i -  
“ proved mode of ornamenting writing papers.” “This inven-  
“ tion relates to a mode of ornamenting the surface of writing  
“ papers without detracting from their utility as writing papers.  
“ This object I propose to effect by printing patterns upon the  
“ paper in pale flat tints, which shall harmonize with the color  
“ of the paper, and so contrast with the color of writing ink as  
“ not to interfere with the legibility of any writing that may be  
“ put upon it, and yet at the same time shall sufficiently indicate  
“ the presence of ornamentation somewhat like that produced in  
“ damask weaving.”

[Printed, 3d.]

A.D. 1855, May 17.—N° 1117.

BLYTH, FREDERICK DELACOURT.—“Improvements in the  
“ manufacture of tea trays, picture frames, and other similar  
“ articles, from papier maché.” These improvements consist, first,  
in the employing, for the purpose of forming “trays” [or other  
articles], “top and bottom pans or dies of different sizes and  
“ shapes, the bottom pressing pan being made larger in size at  
“ the bottom of the tray, and the rim smaller, while the top pan is  
“ smaller in the diameter for the bottom of the tray, but larger in  
“ the rim, thereby leaving room for pressing a thickness of pulp  
“ between the two pans or dies, and yet of forming an upright rim  
“ at right angles with the bottom of the tray and a deep return  
“ curve.” Secondly, “in forming picture frames of large size in  
“ one piece, by pressing the pulp between plates of the forms  
“ desired in place of producing such forms by joining at the  
“ angles.”

[Printed, 6d.]

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A.D. 1855, May 24.—N° 1168.

**SEEGERS, AUGUSTE FRÉDÉRIC, GODFRID.**—(Provisional Protection only.)—“ Improvements in the manufacture of hangings “ of paper and of textile fabrics.” “ These improvements consist “ in printing in gold, silver, copper, or colours upon flock hang-“ ings, that is to say, paper or a textile fabric, covered with flock “ of wool, cotton, silk, or other similar material, by means of “ blocks of copper engraved en creux or in relief, and impressed “ hot upon the paper or fabric by means of a fly press or any other “ suitable means. The adhesion of the metal or color is effected “ by applying to the parts where the engraved block will strike, a “ mordant in powder, as gum lac, or other fusible material, and “ placing upon it a thin sheet of metal or stratum of color. The “ pressure of the heated block will impress the design, and the “ surplus material is removed by a brush. By omitting to use “ metallic leaf or color in powder and employing the blocks cold, “ imitations of Utrecht or Amiens velvet may be obtained.”

[Printed, 3d.]

A.D. 1855, May 24.—N° 1179.

**ADDENBROOKE, JOSEPH.**—“ Improvements in machinery for “ folding envelopes.” These improvements consist in “ the appli-“ cation of the principle of stamping in cameo for a device formed “ on coloured or white ground, and also the introduction of print-“ ing (by letter-press or any of the known modes of printing) on “ envelopes in combination with machinery for folding envelopes.” The inking rollers receive their supply of ink from a “ circular “ plate revolving on a vertical spindle” by means of a rachet “ wheel.” “ This circular plate is supplied with ink or color by “ the distributing roller receiving the ink or color from the supply “ roller revolving (by means of a rachet wheel) under the trough “ containing the ink or colour, and is detached from the framing “ which supports the other (inking) rollers.” The framing sup-“ porting the inking rollers is caused to traverse, by means of a cam and lever, and thereby supply the cameo or type with ink or colour. “ After the surfaces “ of the die and type have received “ ink or color, the envelope blank is placed (by mechanism) as “ shewn, and, pressure being applied it becomes impressed with

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“ the devices on the doe or type. This pressure may be obtained  
“ by any of the well known means.”

[Printed, 6d.]

A.D. 1855, May 26.—N° 1200.

**BELLFORD, AUGUSTE EDOUARD LORADOUX.**—(A communication.)—“ Improved machinery for making envelopes.” In this apparatus there is a circular plate or table, to which rotatory motion is given by suitable means, having five recesses or folding boxes sunk in its face. The operation is as follows :—The cut blank is “ sized ” by means of rollers fed from troughs, and actuated up and down by means of ratchet wheels and clicks ; two branches of a lever then carry off the blank and place it over the mould, when the first piston descends and creases the envelope. The piston is then elevated and the rotating table making one-fifth of a revolution brings the mould under the second plunger or piston, which presses down the first and second folds ; the piston rises again and the table carries the envelope round till it comes under the third piston, which presses down the third and fourth folds ; the fourth piston presses down all the folds and completes the envelope. The fifth part of the revolution leads the mould carrying the envelope thus made over the “ raising plate ” there to be discharged. The “ raising plate ” is situated under the mould at the fifth part of its revolution, and being actuated upwards by a rod, lever, and excentric, carries the finished envelope upwards into a receiving box or frame. As the plate revolves a fresh blank is placed over the next mould in succession, and so on, thus constituting a continuous system of folding envelopes.

[Printed, 10d.]

A.D. 1855, May 29.—N° 1224.

**ACKLIN, JEAN BAPTISTE.**—“ Improvements in the mode of substituting paper for pasteboards in jacquard looms.”

These improvements consist, first, “ in the disposition of a machine or apparatus applied to the jacquard looms, in consequence of which I am enabled to use light sheets of paper instead of the comparatively heavy and cumbersome pasteboards used in the said looms for manufacturing ornamented fabrics.” “ Secondly, refers to an apparatus for punching the paper used

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"in my weaving process." The specification describes a jacquard weaving apparatus wherein "the apparatus is fixed in a steady manner on the frame of the loom, instead of having it moveable between guides or other arrangements provided for the purpose," by which means paper may be used instead of pasteboard, as its action will be more steady and the "organs" of the apparatus can be made to "correspond with the jacquard needles."

In the punching apparatus the paper is carried between iron plates by means of "tooth spring chains," and edge perforated wheels, "actuated by means of a trundle wheel, rollers, and catching hooks." The punches are placed across the plates and are actuated downwards singly by keys connected to double levers, and raised by springs; or by depressing a "rule," at the end of a "race," all the keys may be depressed at one time.

[Printed, 4s. 7d.]

A.D. 1855, June 2.—N° 1262.

LITTLE, CHARLES.—"Improvements in machinery or apparatus for the manufacture of envelopes." These improvements consist, first, "in the use of weighted bell crank levers, working with one end in the folding box for inclining the flaps of the envelope previous to the second descent of the plunger."

Second, in "the mode of feeding from a pile of blanks, by a peculiar arrangement of lever fitted at the extremity with any suitable soft or elastic substance." The "finger" may be fitted with a piece of india-rubber and attached to a vibrating arm which is caused to move to and fro from the pile of blanks to the mouth of the folding box, where it is caught up by a stop and accurately deposits the blank.

Third, in "the mode of setting up the pile of blanks gradually as they are used by the machine, by means of a pall working in a ratchet wheel with a thread formed inside its boss, working on a screw attached to the bottom of a plate on which the blanks are supported."

Fourth, in the mode of actuating the "moveable bottom of the box," "by means of a lever sliding on an inclined plane on the under side of the bottom of the box, and so arranged, that after the plunger has descended a second time, the bottom falls down and allows the finished envelope to slide down a trough into any convenient receptacle."

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"To insure the folding of the flaps in their proper order, I  
" employ small verticle spindles, weighted at their upper ends  
" and fitted to work freely through the plunger, their lower ends  
" projecting a short distance beyond the face of the plunger, so  
" that they come in contact with those flaps to be folded first be-  
" fore the other flaps are acted upon by the plunger. When the  
" plunger has descended to the bottom of the box, these rods or  
" spindles will be forced up inside the plunger flush with the face  
" thereof, and will thus enable the envelope to be perfectly flattened  
" in the folding box."

[Printed, 9d.]

A.D. 1855, June 21.—Nº 1420.

RIOUX, PIERRE FRANCOIS, and DE PARIENTE, LEON.—(A communication.)—(Provisional Protection only.) "Improvements in the fixing of metallic ornaments upon paper, flock, leather, " cotton, silk, or any other fabrics to which such ornaments, " may be applicable." We place the material to be ornamented " upon an elastic or flexible bed which is placed on a table, " which flexible bed must be made of vulcanized caoutchouc, or " any other material which will bear heat; we then have blocks, " cylinders, or dies of metal, upon which are engraved the designs " we wish to represent. These blocks, cylinders, or dies are " heated and pressed upon the fabric, giving the fabric a slight " impression of the design. We then place upon the place where " the design has been so printed *dry* albumen in powder, gum " lac and rosin, each in powder, spirit varnish, or copal varnish, " or any other suitable body that will cause the metallic surface to " adhere. After any of these preparations are carefully sifted " over or printed on with a brush upon the surface of the part " impressed, we take the metallic leaf, (say gold or silver, for " instance,) and place it over the powder or varnish so put on, and " dab it down with a piece of cotton, wool, or cloth. The block, " cylinder, or die is now again pressed over the surface in the " same place it was in the first instance, and the design is fixed " upon the fabric. When leather or such substance is used, we " require the albumen and attaching bodies to be *wet*, or in a " liquid state."

[Printed, 3d.]

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A.D. 1855, June 23.—N° 1440.

**SOREL, STANISLAS TRANQUILLE MODESTE.**—"A machine for applying adhesive matters on stuffs, and also for applying on the said matters other substances or stuffs." This invention consists "in the general arrangement of machinery for waterproofing tissues;" "in the employment of a sheet of vulcanized caoutchouc or other analogous material, for spreading the waterproofing composition on tissues;" and, lastly, "in the arrangement of the machinery, by means of which I introduce steam for heating, which permits of applying to fabrics all compositions softening by heat, especially gutta percha, which is applied and dissolved." The material to be coated is caused to pass over a cylinder which may be heated by steam, and under an apparatus resembling a "doctor box" placed over the cylinder. The coating composition is placed in this apparatus, which may be heated with steam when desired. On the under part of it, and projecting about one eighth of an inch, is fixed a strip of "vulcanized caoutchouc," which acts as an elastic doctor, and thereby regulates the quantity of coating composition applied to the surface of the stuff. The stuff so coated is caused to pass forward to be "flocked" if desired, then pressed between rollers, brushed, and dried over a steam chest; or it may meet another sheet of tissue or paper unwinding from a roller and pass with it between pressing rollers, and on to the drying steam chest.

[Printed, 114.]

A.D. 1855, June 23.—N° 1445.

**SILBERMANN, IGNACE JOSEPH.**—"A new system of manufacturing globes and other printed plane or curved surfaces." This invention relates "to a novel means of printing, by moulding, on all sorts of plane or curved surfaces," and consists, first, "in using curve or plane moulds, and of such substances as can be etched, engraved, or embossed." "Second, in inking the engraved surface with common printers' ink for obtaining a plain print, or with indelible inks, proof against heat, when the printed surfaces are to be baked or moulded in the heated state." "Third, in moulding or casting the matters to be printed on the engraved inked surfaces." The novelty of this

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invention consists in the combination of the three known processes of engraving, inking, and moulding.

[Printed, 3d.]

A.D. 1855, July 12.—N<sup>o</sup> 1558.

**ROBINSON, JOHN, and WEDDING, WILLIAM.**—"Improvements in machinery for cutting paper, cardboard, and other materials." This invention consists, "first, in giving motion to the cutting knife of machines used for cutting paper and other materials, by means of a crank, which takes into a slot in an open link or radial arm connected to the cutting knife. Secondly, in directing the motion of the cutting knife by means of a curved or inclined slot and a stud; and, lastly, in adjusting the cutting edge of the knife by excentrics or cams acting on the back of the blade." In this machine the knife is elevated and depressed by the conjoined action of an inclined plane, which actuates one end of the knife frame, and a revolving crank which is connected to the other end of the frame. The crank actuates a radial arm or oscillating bar, the end of which is connected to the arm of the knife frame. The motion thus given to the knife is lateral and perpendicular. The cutting edge of the knife may be lowered when desired by means of several small excentrics or cams acting when turned on their studs on the back of the knife.

[Printed, 9d.]

A.D. 1855, July 27.—N<sup>o</sup> 1709.

**EFFERTZ, PETER.**—(Provisional Protection only.) "Improvements in machinery for cutting, creasing, or marking paper, card, and pasteboard, and other like substances." "These improvements consist in constructing a machine in which the paper or other substance to be cut is placed upon a fixed bed and there held firmly by a beam, which may be elevated or depressed by two female and two male screws actuated by bevel gearing. Suitable cutting guages are affixed to the machine. The creasing or marking is effected by means of a tool carried in a frame, which is caused to traverse across the machine. The cutting may be effected by a traversing knife, mounted in a longitudinal slot in the beam, or by a knife the whole length of

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" the beam, which is actuated in a similar manner to that adopted  
" for bringing down the holding beam. For cutting the edges of  
" books of the desired concavity, the knife, being mounted in the  
" holder, is shaped with edges which will give the desired concavity."

[Printed, 8d.]

A.D. 1855, August 3.—N<sup>o</sup> 1768.

**JOHNSON, JOHN HENRY.**—(A communication.)—(Provisional Protection only.) "A new material for ornamenting various articles." "This invention consists in the production on paper or cloth of any kind of an imitation japan, composed of various colors or materials, according to taste, but mother-of-pearl will be the material I should most frequently employ for ornamenting the fabric. If mother-of-pearl be employed, it is used very thin, and it is shaped according to any desired pattern. This substance is then laid on the surface of the paper or cloth; a thin coat of liquid or transparent gelatine is applied to those surfaces of the cloth or paper not covered by the mother-of-pearl, so as to fill up the hollow between the mother-of-pearl, which would otherwise stand up slightly from the surface of the fabric, by which means a perfectly even, smooth, and glossy surface is obtained. The design may then be painted according to taste, and the colors so applied are preserved from contact with the air by one or more thin coats of gelatine or varnish, according to the nature of the paper or cloth employed.

"This paper or cloth so ornamented may be used for ornamenting various articles, such as glove boxes, sweetmeat boxes, cigar cases, porte-monnaies, tea caddies, and other similar articles, by being simply gummed or cemented thereto."

[Printed, 8d.]

A.D. 1855, August 10.—N<sup>o</sup> 1821.

**ULLMER, EDWIN, and ULLMER, WILLIAM.**—"Improvements in machines for cutting paper, card, and millboards, and other like substances." This invention consists in imparting to the knife of paper-cutting machines a combined lateral and perpendicular motion (a diagonal or draw cut), by means of a bell crank lever attached to one end of the knife frame, actuated by a crank and connecting rod. The fulcrum of the lever being attached to

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the fixed framing will cause, by means of the descent of the connecting rod, the bell crank to actuate one end of the knife laterally and perpendicularly. The other end of the knife frame is actuated downwards by means of another rod and eccentric movement. Both rods may be adjusted as to length by means of male and female screws.

[Printed, 9d.]

A.D. 1855, September 11.—N° 2054.

**HINCHLIFF, GEORGE STANLEY.**—(A communication.)—(Provisional Protection only.) “Improvements in the manufacture of “paper-hangings.” “A convenient method of carrying my invention into effect consists in first applying an adhesive substance “to the back of a sheet of velvet, silk, satin, or other fabric, and “then cutting out therefrom figures, patterns, or other designs or “devices, which I apply on the paper-hangings, having previously heated the paper by passing it over a heated surface or “otherwise. The adhesive composition which I prefer to use “consists of shellac, mastic, and gum juniper, combined with a “spirit, such as naptha.”

[Printed, 3d.]

A.D. 1855, October 5.—N° 2226.

**PFEIFFER, JEAN DANIEL.**—“Improvements in the construction “of knives or cutters.” “These consist in forming the body of the “knife of two pieces of iron, which are kept together by screws, “and hold between them a plate of steel, which forms the cutting “edge of the knife. This plate of steel is set up [down] by “screws pressing on its back edge, so as to project it a short distance beyond the pieces of iron forming the body [the holder] of “the knife, and as it wears away by use and sharpening, it is “protruded further and further forward by the set screws. The “plate of steel is so set between the pieces of iron, that the “bevilled edge of the plate is on a straight line with the forward “surface of the holder.”

[Printed, 6d.]

A.D. 1855, October 18.—N° 2337.

**GRAHAM, DOCTOR.**—“Improvements in the manufacture of “paper hangings, and in the machinery to be used in such manu-

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"*facture.*" These improvements relate first, "to the use, for the purpose of grounding paper for paper hangings, of the sesqui-silicate of alumina, in which the atoms of allumina are to those of silicio acid as two is to three." "New Jersey clay" has been found most applicable for the above purpose. Secondly, "to the machinery for grounding and polishing the paper." In the grounding machine the colour is contained in a trough, in which a furnishing roller is caused to rotate, the speed of which may be increased or diminished by means of a pair of conical drums and strap, whereby the supply of colour carried up to the transmitting roller is regulated. The paper is caused to pass between the colour transmitting roller and another pressing roller, and is thereby supplied with colour, and passes on to and over an endless web revolving round a table. In its passage it is first brushed by a brush, to which is given a lateral and reciprocating motion, then by a revolving brush, and finally by a series of brushes, to which a double rotatory motion is imparted by means of a sun and planet arrangement. This arrangement of rotating brushes may be applied also to the polishing of such coloured papers; or the paper may be polished by passing it round a drum, and under the action of a number of brushes placed round the periphery of the drum, and caused to rotate at a high speed.

[Printed, 1*s.* 1*d.*]

A.D. 1855, October 23.—N° 2369.

BELLAMY, JOHN.—"Improvements in graining, and in producing imitative ornamental surfaces, and in certain instruments or apparatus to be employed for such purposes." This invention relates, first, "to the method of graining or marbling upon paper or cardboard." The paper, &c. being properly sized, and coated with a thin coating of spirit varnish, is covered with the desired color, such as a mixture of venetian red and vandyke brown, when mahogany is desired to be imitated, and passed under the graining roller. The higher parts of the graining roller (or those parts in relief) will take off a certain quantity of color, leaving the paper mottled or veined, according to the pattern cut or carved on the graining surface. The paper so grained may be "over grained," by means of printing thereon another colour, by

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a surface printing roller. The paper has then to be varnished or French polished.

Secondly, relates to the graining or marbling upon "glass or slate;" thirdly, to the graining, &c., "upon the natural surface of the woods."

Lastly, relates to improvements in "the graining tools," which consists, first, in the application of an elastic substance (such as a thick sheet of vulcanized india-rubber, gutta percha, or a composition made of treacle and glue), between the wood or metal of which the centre of the graining roller is made, and its leather surface, or graining surface, for the purpose of increasing the elasticity of the graining surface. The graining surface may be made of a continuous length of leather, or of a woven fabric, which may be unwound and pressed against the wet colour on the paper.

[Printed, 7d.]

A.D. 1855, November 7.—N° 2500.

SCHOLEFIELD, FREDERICK.—"Improvements in machinery or apparatus for cutting paper, cardboard, and similar materials." This invention consists in imparting to the cutting knife a combined "vertical and endwise movement." The "vertical" movement may be effected by tappets which actuate the jointed rods attached to each end of the knife holder. The "sideway" movement is effected by means of an inclined plane or slot in which acts a bowl or roller attached to one end of the knife holder.

[Printed, 10d.]

A.D. 1855, November 16.—N° 2586.

HUDSON, THOMAS.—(Provisional Protection only.) "Improvements in machinery or apparatus for cutting and punching metals, paper, leather, and similar articles." "My invention relates particularly to the apparatus commonly known by the name of shears, as used to cut either metal or material, and consists of an arrangement of the different parts so as to obtain additional power, and also the means of passing the metal or material through the shears in a perfectly horizontal position, without the usual bend or curve consequent upon

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" the arrangement and construction of the shears now in general use." (See Drawing.)

[Printed, 5d.]

A.D. 1855, November 30.—N° 2703.

DUSAUTOY, AUGUSTE.—"Machinery for cutting cloth and other substances." The cutting instrument may consist of "a thin flexible endless steel blade" passed after the manner of a belt round two pulleys driven at a high speed. The steel blade may be steadied by means of a metallic plate which is caused to press against it. The article to be cut being placed on a table, is brought against the edge of the steel ribbon or blade so revolving, and cut to the desired shape. Or a cutting blade formed of thin sheet may be actuated rapidly up and down by means of an eccentric, the ends of the blades being kept at a proper tension by means of springs; or the desired tension may be obtained by connecting each end of the blade to the piston rod of a small air pump; or by means of three sectors, one of which being actuated by an eccentric, will cause the other two to give to the blade a rapid up and down movement. The edge of the blade may be serrated.

[Printed, 1s. 2d.]

A.D. 1855, December 3.—N° 2717.

WALTON, FREDERICK.—"Improvements in papier maché trays." These improvements consist in "making the bottoms or the upper surface of the bottoms of the papier maché trays of glass or enamel." The rim or edge of the tray is made of papier maché, by the ordinary processes, with a rib formed all round, and the plate of enamel, or of glass, ornamented on its under side by painting, silvering, or otherwise, is inserted therein and fixed by a suitable cement. The under side of the glass may be protected by a thin sheet of wood and by green baize.

[Printed, 5d.]

A.D. 1855, December 22.—N° 2899.

GEDGE, JOHN.—(A communication from Pierre, Guillaume.)—"Improvements in cutting and folding paper to form letters or

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“ notes and envelopes in one piece.” The object of the Patentee is to preserve the postal mark as additional evidence of the date of the transmission of the letter. The drawings attached to the specification show the form preferred.

[Printed, 8d.]

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### 1856.

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A.D. 1856, February 15.—N° 394.

HOGG, JAMES, junior.—“ Improvements in the manufacture of “ envelopes and certain other combinations and applications of “ paper and gum, denominated ‘letter checks,’ for containing and “ securing written, printed, or other communications.” These improvements consist, first, in perforating or cutting or stamping holes or slits in all or any of the flaps of envelopes (after the gum has been applied) whereby the gum, when wetted, and the flaps pressed together, will cause them to adhere more firmly and securely than heretofore. Secondly, consists in combining in one sheet the envelope and paper to be written on, and in perforating the seal flap as above. See the drawings for the shape preferred.

[Printed, 1s. 9d.]

A.D. 1856, February 21.—N° 443.

DAWSON, WILLIAM.—(Provisional Protection only.) “ Im-“ provements in machinery or apparatus for cutting paper or other “ materials.” “ The object of this invention is to make the same “ machine cut both vertically and diagonally.” The knife is elevated and depressed by a cam, which actuates the slides in which it is held, and the diagonal movement is produced by a radius rod, one end of which is connected to the framing, and the other to the knife holder.

[Printed, 5d.]

A.D. 1856, February 28.—N° 513.

ARCHER, ELISHA THOMAS.—“ Improvements in envelopes for “ *the transmission of letters or parcels.*” These improvements con-

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sist, first, in forming an envelope, so that one of the side flaps will have a "lappet" of suitable form cut in it. In closing the envelope this flap is gummed down, but the lappet is left loose. The opposite flap is then wetted on both sides and pressed down, and caused to adhere by its under surface to the gum on the other flaps. The loose lappet is then pressed down over the last flap, and being gummed adheres to its wetted surface. Secondly, in forming mourning or other varieties of envelopes by printing adhesive matter on them, in stripes or otherwise, and when still moist applying flock, dust, or powder of any suitable material, in the usual manner of flocking papers.

[Printed, 10d.]

A.D. 1856, February 29.—N° 519.

MARKETT, JOHN.—(Provisional Protection only.) "Improvements in the manufacture of envelopes." "My improved form of envelope is in the shape of a pocket, with the paper whole at back and front, and folded over at one side. The edges at top and bottom are perforated with similar perforations, and are cemented together. The back is prolonged and formed with a tongue, and two angle pieces are cut away from the sides of the front, leaving a central flap. The letter is intended to be inserted through or at the side, the tongue is tucked in, and the flap, gummed or rendered adhesive and perforated at the edges, is turned down and secured over the back end of the tongue. A postage stamp may then be placed over the top edge of the flap."

[Printed, 8d.]

A.D. 1856, March 22.—N° 676.

COCKINGS, JAMES SEPTIMUS.—(Provisional Protection only.) "An improved envelope, and which said envelope I propose designating as the despatch or return envelope." "My improvement in envelopes mainly consists in making them with an additional fly or leaf, by which means the envelope may be used a second time, still affording every facility for closing up and protecting the letter or writing within."

"When such flies are not used for correspondence, they can be used as an efficient advertising medium, or to convey mercantile,

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“ trade or other notices, and may be printed before the envelope  
“ is made up.”

“ In making these envelopes one fly or leaf may be cut and  
“ formed with the rest of the envelope, or the two flies may be cut  
“ out separate and added to the other part of the envelope.”

[Printed, 3d.]

A.D. 1856, March 26.—N° 722.

SMITH, GEORGE.—(Provisional Protection only.) “ Improvements in ‘envelopes’ for containing letters or documents.” “ These improvements are effected by puncturing or piercing the “ tongue of the envelope with innumerable small holes, arranged “ in the form of an ornamental fragile pattern or device, which is “ afterwards coated with adhesive material as ordinarily practised, “ so that when the tongue is stuck down, or, in other words, when “ the envelope is sealed, any attempt being made to unseal it will “ be shown.”

“ Another mode of affording additional security to envelopes is “ by attaching a delicate piece of perforated or plain paper to the “ under side of the tongue of the envelope, so as still further to “ increase the difficulty of unsealing the envelope.” Another mode consists in “ tracing a pattern or design with acid upon the “ tongue of the envelope, or upon the thin paper affixed thereto, “ the intention being to destroy the tenacity of the fibres of the “ paper, where the acid is, without altering the appearance of “ the tongue, so that any attempt to unseal the tongue would “ have the effect of removing from the tongue a portion, if “ not all, of the pattern traced by the acid, and thus operate as “ a detector.”

[Printed, 3d.]

A.D. 1856, March 31.—N° 779.

NEWTON, ALFRED VINCENT.—(A communication.)—“ Improved machinery for folding paper.” In this machine the knife edge by which the folding is in part effected is made stationery, and the folded sheet is carried off by means of nippers which seize the sheet by the “middle of the middle margin.”

The sheet to be folded being placed on a table is conveyed under the folding nippers by fingers in the usual way. These fingers are

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raised and dropped when required by means of a "trip dog" turning on a pivot. The nippers are caused to descend and grasp the paper by the middle margin which has been placed over the folding knife by the fingers and carry away the folded sheet into a position to be folded again by a second knife and pair of nippers, and so on as often as the paper requires to be folded. The motion of the folding nippers is derived from a cam operating on suitable levers.

[Printed, 11d.]

A.D. 1856, April 7.—N° 842.

MORTON, ARNOLD.—"Improvements in the manufacture of "paper hangings for decorative purposes." This invention consists "in the use of dissolved soap, and compounding of the "vehicles aforesaid, for reducing or re-subduing coloring matters "employed in the manufacture of paints and pigments used in "making paper hangings employed for decorative purposes, after "such said paints and pigments have or not been subdued by "acids." As regards the "body colors or stainers," the Patentee dissolves "soap" in water, and adds "skimmed milk," and then "powdered alum," and grinds the whole together; he then adds "allum" to "china clay," and "partly or wholly subdues" the mixture with soap solution. "To this mixture I add as much of "the vehicle, No. 1 (not described), as will properly fix the same "to render it a durable paint."

"Vehicle No. 2" is composed of "soap," "skimmed milk," "alum," "sulphate of zinc," or "acetic acid," in slight excess, and well ground together. Such substances as "sulphate of lead," "sulphate of barytes or dry zinc," "lime prepared according to "the mode set forth in the specification," "No. 1667, July 13, "A.D. 1853," "sugar of lead," may be incorporated with the soap solution. The exact quantities of each substance employed "will depend upon the relative quantities and strength of "the various ingredients used."

[Printed, 4d.]

A.D. 1856, April 14.—N° 890.

WARREN, WILLIAM, and DE LA RUE, WARREN.—"An "improvement in the manufacture of envelopes." "This invent-

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"tion has for its object an improvement in the manufacture of envelopes, with a view to prevent any writing or printing being read through the same. For this purpose, in place of making up envelopes of plain paper, or paper of an uniform color all over the interior surfaces, such interior surfaces are broken up by being printed or ruled in, or with patterns with colors different from that of the paper, by which, on looking through an envelope from the exterior, even though the paper may be to a considerable degree transparent, the pattern produced on the interior surface renders the whole interior confused, and prevents any part of the letter, note, or document being read through the envelope."

[Printed, 8d.]

A.D. 1856, April 26.—N<sup>o</sup> 1004.

**WALKER, THOMAS.**—"Improvements in playing cards." These improvements consist, first, "in forming playing cards of a circular form, or of a figure having five, six, seven, eight, or other number of sides more than four, or of an elliptical form, or of portions of elipses, or circles." Secondly, "in making or placing the entire number of spots or pips denoting the value of the card near one edge, or near both edges of the cards." The figures of the king, queen, and knave may also be printed near the edges of the cards, and have their names printed. The number of spots on each card may also be marked in numeral characters.

[Printed, 6d.]

A.D. 1856, May 6.—N<sup>o</sup> 1066.

**NEWTON, WILLIAM EDWARD.**—(A communication.)—"Improved machinery for making envelopes." These improvements consist, first, "in the general arrangement of the mechanism in which the feeding, gumming, partial and complete folding, and delivering devices are operated from two shafts, so connected together that the rotary motion of one shall give a rocking motion to the other." The upper shaft placed over the machine is the driving shaft, and is double cranked, and connected by a lever and crank to the lower shaft placed under the machine. The revolution of the first shaft causes the lower shaft to oscillate

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Through these two shafts all the necessary movements are given to the various parts of the machine by means of cranks, levers, connecting rods, &c. properly placed and adjusted.

Secondly, "in the feeding up of the blanks by two feeding plates, each one carrying it forward a portion of the distance, and delivering it against stops or guides, from whence it is carried through the machine and completed." One of these feeding plates brings the blank from the table half way to the folding box; and on being caused to recede, by means of a traversing movement, leaves the blank there caught by stops, while the other feeding plate advancing receives it and carries it on to the folding box. These two plates act simultaneously, and are actuated to and fro by the same arm on the rocking shaft.

Thirdly, "in the combined operation of the paste box and pasters." The paste box is swung by two arms, and is caused to oscillate forwards, which at the same time gives it an upward motion, received from the rocking shaft, actuating by means of a bent arm on the end of a lever, the other end of which is connected, by means of a rod, to the paste box. The upward motion referred to brings the paste rollers in the box in contact with the surface of the pasters when desired. The paste rollers may be caused to rotate in their paste boxes by means of ratchet wheels and stationary pawles. The pasters are elevated and depressed by means of a cam on the main shaft actuating, through a connecting rod, a rocking shaft, to which is attached an arm and stirrup connected to the pasters.

Fourth and lastly, "in the combination with the [folding] block, the folders 1, 2, 3, and 4, the hinged joints of which are covered, and the swell of the hinges facing each other;" and "in the combination with the folders of sliding cams, with their several connections for operating said folders."

[Printed, 11d.]

A.D. 1856, June 12.—N<sup>o</sup> 1391.

HARDWICK, PHILIP WESLEY.—(Provisional Protection only.) "An improved manufacture of tickets for railway and other uses." "The object of this invention is to enable railway and other ticket collectors and inspectors to ascertain whether the return or season tickets presented to their inspection were

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“ issued to the persons presenting them. This I propose to effect “ by printing or stamping upon the tickets, as they are issued, “ any arbitrary signs, such as letters or figures, which shall “ indicate the age, sex, and chief peculiarities of the person “ demanding a ticket.”

[Printed, 8d.]

A.D. 1856, August 2.—N<sup>o</sup> 1829.

DONKIN, THOMAS.—(A communication.)—“ Improvements in “ the glazing of paper.” The Patentee proposes, first, to damp or wet the paper by means of two rollers over and in contact with which the paper is caused to pass. These rollers are supplied with moisture by corresponding furnishing rollers revolving in a trough of water; and afterwards to glaze the paper so damped by passing it under, over, and between three rollers, suitably weighted by levers, the upper and under ones being made of metal and heated by steam or otherwise, and the centre or intermediate one made of paper.

[Printed, 6d.]

A.D. 1856, August 5.—N<sup>o</sup> 1845.

SMITH, ANDREW, and SMITH, WILLIAM.—(Provisional Protection only.)

“ Improvements in ruling or delineating ornamental figures.” “ Instead of the ruling or lining pens employed in the machinery “ described in the specification of the original patent of Mr. William Smith, small wheels or rollers are used in carrying out “ the present invention. By this substitution of wheels or rollers, “ the ornamental work or device may be produced in colors other “ than water colors, as well as with water colors. For example, “ by the wheel or roller arrangement oil or varnish colors may “ be used, and the ruling or color delineation may be performed “ upon oil color surfaces, as well as upon leather, cloth, and other “ surfaces. The present and secondary improvements, as in the “ machinery already patented by Mr. William Smith, relate also “ to the securing of superior economy in the general process of “ ruling patterns in various colors. Thus, in ruling a ‘tartan’ “ pattern, a separate roller or small wheel is applied for each “ repeat of the pattern, so that the adjusting mechanism for

" setting the whole at the required distances simply works over  
" one repeat in the width of the traverse necessary to fill up or  
" cover the whole surface which is under operation, instead of  
" having but one wheel or roller to repeat the device and traverse  
" the whole surface. By this plan, as in Mr. William Smith's  
" former machine, the whole number of repeats upon the surface  
" under operation is completed at once."

[Printed, 3d.]

A.D. 1856, August 5.—Nº 1848.

KEITH, JOHN.—“ Improved machinery for making envelopes.” The Patentee claims in this invention, first, “ the use of a travelling “ creasing box, for carrying the creased blank from under the “ creasing plunger to the folder.” Secondly, “ securing the “ creased blank in position in the box, during the traverse thereof “ by the pressure of the atmosphere.” Thirdly, “ effecting the “ inward inclination of the first three lappets of the blank (ready “ for the action of the folder) during the forward traverse of the “ blank.” Fourth, “ the peculiar construction of folding plunger, “ whereby the folded envelope will be caused to adhere thereto, “ and rise with it out of the creasing box.”

“ The paper blank is fed into the machine by hand, and creased “ by the descent of a plunger into the creasing box as usual. A “ partial exhaustion is then effected under the creased paper to “ hold it securely in the box while the plunger rises. The box “ is then traversed forward along suitable guides, under a second “ plunger of peculiar construction, for the purpose of folding “ over the flaps or lappets of the blank, and pressing them down “ previous to discharging the finished envelope from the machine. “ As the creased blank is carried forward with its flaps standing “ vertically, or nearly so, out of the box, the end flaps meet elastic “ or yielding projections which turn the flaps inwards, and thus “ bring them under the second plunger. This plunger consists “ of a hollow rectangular frame fitted with sliding pieces, which “ act in consecutive order, first turning inwards the forward side “ flap (while the creased blank is moving into position), and then “ laying the end flaps over it. A pendent curved spring, which “ is caused to advance slightly by the pressure of the descend- “ ing plunger, turns over the fourth flap, and the plunger pushing “ aside the projections which turned in the end flaps, then comes

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“ down on the envelope to give it the final pressure; before this “ takes place the exhaustion below the envelope is removed. The “ plunger is also provided with an exhaust arrangement, by means “ of which the plunger when rising is enabled to draw up the “ envelope out of the box; the box then returns to be fed by a “ fresh blank, and the exhaust being cut off immediately the box “ has passed away, the envelope is free to fall by its own gravity “ out of the machine.”

[Printed, 9d.]

A.D. 1856, October 4.—N° 2329.

PRESTON, WALMSLEY.—“ Improved machinery to be used in “ the manufacture of paper hangings.” “ The object of this “ invention is to damp or moisten the paper previously to the “ same being passed through any glazing or polishing machinery.” For this purpose the sheets of paper are passed in a continuous manner through a box or cistern containing steam, in which are placed suitable rollers, over and under which the paper passes. It is then conducted over an endless sheet of cloth, which is kept damp by a roller revolving in a trough of water and against the surface of the endless cloth.

[Printed, 6d.]

A.D. 1856, October 14.—N° 2402.

BREMNER, SAMUEL.—“ Improvements in pouches or envelopes, “ and in machinery or apparatus for manufacturing or producing “ the same.”

This invention relates to an improved pouch or envelope more particularly designed for the reception of apothecaries' prescriptions, on which designs or figures may be conveniently printed; and consists, first, in the general arrangement of machinery for the manufacture of pouches or envelopes; second, in cutting the paper of the required form; third, in gumming the flaps by machinery; fourth, in mechanically arranging the papers with accuracy previous to printing them; and fifth, making an envelope or pouch of the particular form described.

[Printed, 1s.]

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A.D. 1856, October 21.—N° 2466.

MARTIN, JOHN COWDERY.—“An improvement in glazing “paper.” “This invention consists in glazing paper by means “of endless glazing surfaces, so as to glaze paper continuously in “any length. This I effect by adding on the exterior of ordinary “rolls used in glazing paper, one or more continuous surfaces or “endless coverings (one within the other, when more than one is “used) of larger diameter than the rollers, these surfaces being “composed of metal or other suitable material capable of impart-“ing a glaze to paper, and so as to form continuous endless “glazing surfaces by the revolution of an upper and lower roller “or rollers, and the motion against each other of the loose endless “coverings or surfaces between which the paper is to be passed.”

[Printed, 6d.]

A.D. 1856, November 3.—N° 2576.

TEARNE, SAMUEL, and RICHMOND, GEORGE WILLIAM.—“Certain improvements in producing ornamental designs on the “surfaces of fancy and other goods made of papier maché, wood, “glass, china, earthenware, tin, iron, or other such like materials, “the surfaces of which when made up are usually finished by “staining, varnishing, painting, or japanning.” “This invention “consists, firstly, in producing ornamental designs upon surfaces “by first colouring, graining, or marbling the said surface with a “distemper or water colour, and transferring thereto a design “printed in an oily material, so as to protect part of the surface “while the graining or marbling is washed from the remainder, “the process being repeated as often as may be necessary to pro-“duce the various kinds of design required.”

“Secondly, producing ornamental designs upon surfaces by “first colouring, graining, or marbling the said surface with an “oil colour, and transferring thereto a design printed in distemper “or water colour, so as to protect part of the surface, while the “graining or marbling is removed from the remainder by a “suitable solvent, the process being repeated as often as may be “necessary to produce the various kinds of design required.”

“Thirdly, the process of ornamenting pearl, and such other “surfaces as may be acted upon by acids, that is to say, trans-“ferring to the said surfaces a design, printed in some material not

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“ acted upon by the acid employed, for the purpose of defending  
“ a portion of the surface from the action of the acid.”

“ Fourthly, ornamenting glass by transferring thereto a printed  
“ design, so as to defend portions of the surface while the stain  
“ or ground colour is poured or floated upon the said surface,  
“ and afterwards drying the stain or ground colour and burning,  
“ the stop being previously removed or burnt off by the heat  
“ applied.”

“ Lastly, ornamenting glass and other surfaces by transferring  
“ thereto designs printed in colour.”

[Printed, 4d.]

A.D. 1856, November 5.—Nº 2602.

BRINDLEY, WILLIAM.—(Provisional Protection only.) “Im-  
“ provements in the preparation of paper hangings and other  
“ ornamental papers.” “To waterproof wall and other orna-  
“ mental papers, I impregnate papier maché or common paper  
“ pannel boards with linseed oil or other suitable oil, and press  
“ the paper to be prepared between them in a screw or other press,  
“ and the paper may be in layers alternating between a series of  
“ such oiled paper boards. I afterwards subject the prepared  
“ papers to a temperature of 250°, or thereabouts, in a hot chamber,  
“ which completes my said process.”

“ And, secondly, in glazing paper hangings and paper generally  
“ prepared by my said process, by passing the paper and com-  
“ pressing it between revolving smooth surfaced metal rollers, as  
“ practised in calender machines.”

[Printed, 3d.]

A.D. 1856, November 7.—Nº 2621.

OLLIS, THOMAS, junior.—(Provisional Protection only.) “ Im-  
“ provements in machinery or apparatus for cutting paper, card-  
“ board, millboard, scaleboard, leather, and other substances of a  
“ like nature.” “This invention consists, firstly, in using to the  
“ cutting machine an adjustable table, so that its position can be  
“ varied from the level to an angular or bevelled position, as may  
“ be required to alter the downward course of the cut, which I  
“ effect by placing a shaft or bearing under the table, so that it can

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" vibrate or shift to any position required, and be held fast by  
" screws, levers, or any suitable contrivance.

" Secondly, in the application of a side guide, whereby the  
" squaring of the material or other desired angle is easily obtained,  
" the said side guide being placed on the table behind the knife  
" and adjusted to any angle by screws, or placed in a slide tra-  
" versed with a screw and nut."

" Thirdly, in giving a leverage and fulcrum action and a peculiar  
" descending motion to the knife, by means of a groove or other  
" guiding arrangement placed at any angle between 45° and 90°,  
" between the sides of the machine, which action and motion  
" are assisted by an eccentric crank or other mechanical movement,  
" for the purpose of causing one end or the knife to rise higher  
" and quicker than the other.

" And, fourthly, in the employment of a holder or holders in  
" addition to the ordinary platen or support, for the purpose of  
" giving an additional back pressure or support to the material to  
" be cut behind the said platen, to which is fastened brackets or  
" supports having plates or rods which press on the material,  
" thereby partially or entirely covering it."

[Printed, &c.]

A.D. 1856, November 13.—Nº 2672.

**JOHNSON, JOHN HENRY.**—(A communication from Cyrus Chambers.)—(Provisional Protection only.) “Improvements in machinery or apparatus for cutting and folding paper.” “The sheet to be folded is laid upon a table, and is so adjusted thereon that the holes made by the register pins of the printing press shall coincide with corresponding adjustable registers, or pins, situated between the first of a series of pairs of folding rollers.” “A pressing plate or blade, having a slightly concave edge, and fitted with small projecting points, now descends by the action of a lever and cam, and immediately the points have come in contact with the sheet, the adjustable register pins above referred to are made to descend beneath the rollers,” and inserts the sheet in a creased form between the revolving folding rollers. The sheet so folded is then cut at the folded edge by means of a pair of shears. The cut sheets are again depressed by a second pressing plate or blade between rollers, whereby the paper is folded cross-

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ways, and so on to the third pair of folding rollers. The presser plate may be provided with two "sliding plates to carry diagonal " points," just long enough to penetrate only one thickness of paper, by which means the Patentee effects the depression of one cut sheet at a time, the bottom one going first through the rollers.

[Printed, 3d.]

A.D. 1856, November 19.—N<sup>o</sup> 2727.

BRINDLEY, WILLIAM.—"Improvements in the treatment and " application of papier maché for covering floors, roofs, and other " like useful purposes." "First prepare the papier maché, by " putting it into a wire or perforated metal sieve or frame, to " obtain sheets of any required thickness, according to the usual " process of manufacture, and ornament such sheets while in a " soft state, by embossing or figuring the surface by raising " figures thereon, which I effect by means of metal, papier maché, " or other stencil plates, or like means. Another preparation of " sheets of papier maché, consists in covering one or both sides " with fabrics made of wool, hair, or other suitable fibrous mate- " rials, previously perforated or otherwise; or such materials may " be placed between two or more sheets of papier maché, rendering " such manufactured articles noiseless when trod on. And sheets " of papier maché may be corrugated by pressing them between " corrugated metal or other moulds. The corrugated sheets of " papier maché, being principally adapted for various descriptions " of roofing, require to be first prepared by applying linseed oil " by pressure, and drying it at a temperature of 200 degrees " Fahrenheit, or upwards."

[Printed, 3d.]

A.D. 1856, November 20.—N<sup>o</sup> 2742.

SALT, EDWIN.—(Provisional Protection only.) "An improved " paper-cutting machine." "This machine has a roller, worked " by a crank or bar attached at one end to a chain or band, " working into a toothed wheel or on a pulley, and is weighted " at its other end. I also provide levers, studs, and double- " faced cams at each side and inside of the machine framing, " affording communication which measures the length of the

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“ paper sheet at each interval of cutting ; the same motion also “ works the drop board or gripper, and the roller is lifted off “ the paper until the cut is made, when the gripper holds it just “ above the cross-cut knife and a reciprocating motion continually “ going on. The knife or cutter slides in or on brackets with an “ oblique motion attached, produced by a pulley in an angle “ groove under the knife frame, and the knife is worked by a “ double-faced cam, in which a roller works on a stud pin, fixed “ to the connecting rod, and is combined with other suitable “ arrangements connecting the cross-cut knife with the cam for “ working the knife backwards and forwards.”

[Printed, 8d.]

A.D. 1856, December 10.—N° 2926.

**STOREY, WILLIAM, and STOREY, THOMAS.**—“ Improvements “ in forming ornamental devices on the surface of paper and cer- “ tain prepared woven fabrics.” These improvements consist “ in “ the production of ornamental patterns or devices on the surface “ of paper and woven or other fabrics, by coating such surface “ with plastic color [distempers or oil mixtures as examples], and “ then impressing it with blocks or cylinders having figures in “ relief (giving the required design), which break up and redis- “ tribute portions of the color into figures having a resemblance “ to those formed in the blocks or cylinders, and also produce “ peculiar masses, or veins, or reticulations.” The Patentee prefers “ to make the surface of the blocks or rollers so employed of india- “ rubber, leather, or printers’ roller composition ; but wood or metal “ may be employed for that purpose.”

[Printed, 4d.]

A.D. 1856, December 22.—N° 3033.

**STAMFORD, EDWARD.**—(Provisional Protection only.) “ An “ improvement in the manufacture of envelopes.” “ The object “ of this invention is to provide a means for facilitating the distri- “ bution by the clerks in the post office, of local and other letters, “ in conformity with the recent post office regulations. With this “ view I propose to manufacture envelopes each with a designa- “ tion, by preference on their inner face, of some one of the several “ local districts mapped out by the post office authorities, and to

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“ provide the public by that means with a ready reference showing  
“ the district whence any local letter to be answered proceeded.”  
The designation which shows the district “ I propose to apply to  
“ the envelope by means of surface or other printing or by embos-  
“ sing or stamping.”

[Printed, 3d.]

A.D. 1856, December 24.—N° 3054.

TAYLOR, WILLIAM.—“ Improvements in producing various  
“ ornamental effects upon fabrics, paper, and other surfaces.”  
These improvements consist, first, in attaching to the surface of  
two printing rollers, rotating together and in exact unison, cut  
out figures and their counterparts, which are suitably supplied  
with colour by two sets of furnishing and transmitting rollers.  
The material to be printed is caused to pass between the rollers,  
and is thereby impressed on both sides. The figures may be cut  
out of prepared india-rubber, gutta percha, or of any other suitable  
elastic material.

Secondly, consists in employing lace or other similar open fabric  
to print from. For this purpose the lace may be suitably stretched  
and passed between rollers furnished with a regulated quantity of  
colour. The lace, &c., so coloured on both sides, is then passed  
down between a pair of pressure rollers, over each of which is  
passed a fabric or paper to be ornamented.

Thirdly, consists in interposing between the two printing cylinders  
a bowl or “ blanket pressure roller.” The fabric to be printed  
is caused to pass round the bowl and between the rollers, and is  
thereby printed in two distinct colours.

Fourthly, in causing one fabric, such as lace, to adhere by mois-  
ture and pressure to another fabric or material, such as paper, and  
passing the united web between furnishing colour rollers and the  
blanket pressure roller. Such combined fabric may be further  
coated with powder colour, flock, leaf metals, &c., or the two fabrics  
may be separated when sufficiently dried.

Fifthly, in coating, silvering, or gilding of threads of cotton, &c.,  
by passing them in a regulated continuous manner between rollers  
which supply the varnish, and between other rollers covered with  
flannel and rotating in a box of the required powder, and then  
between revolving brushes; or the metal, in the shape of leaf, may  
be placed on the surface of other webs of cloth or paper, which are

caused to pass between pressure rollers along with and in contact with the threads.

Sixthly, consists in printing suitable colours on thin sliced wood or scaleboard "cut from the round," by means of zinc rollers, engraved or etched, in order to produce the resemblance of veining or graining.

Seventhly, consists in causing threads, arranged after the manner of tapes, to adhere to the surface of paper or other fabric by means of gelatine, then coating the whole with varnish and gilding or coating it with metal leaf, as before described. The threads may be reeled off the paper, &c., and applied for spirally coating other threads.

Eighthly, consists in imbedding lace or other fabric, by damping, in paper, gutta percha, &c., coating it with varnish as before, but on one side only, and then separating them and gilding the lace on the varnished side, in the manner before described.

Lastly, consists in laying lace dressed in gelatine on a web of dry flannel extended on a table and coated with leaf metals, then placing over it another web of flannel, damped with hot water, and passing the whole through a pair of pressure rollers.

[Printed, 2s.]

A.D. 1856, December 26.—Nº 3074.

CLARK, WILLIAM.—(A communication.)—"Improvements in air and waterproof coatings, and in their application." These improvements consist, first, in coating "moulded plasters, porous stones, and organic pervious alterable substances," such as paper, "fabrics," cordage, sails, wood of ships, railway sleepers, &c., with a compound of "gelatine and tannin," for the purpose of rendering them "impervious to air and water," and less liable to decay. The substance to be operated upon is coated with gelatine, isinglass, glue, or other glutinous matters, and afterwards soaked in a solution of tannin, or of matters containing tannic acid. Fabrics may be "dressed" with the above compound. Dyed colours may be fixed by it on fabrics, and their elasticity may be restored by washing and ironing; and "pigments" may be fixed on fabrics by first printing on a mixture of them (ultramarine for example), with gelatine, albumen, or casein, and afterwards, when dried, immersing the printed fabric in a solution of tanning matter; or mordants may be diluted with gelatine, and fixed with

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tannin, when rich and more solid colours may be obtained on dyeing. Colours in distemper may also be fixed by this process. The Patentee also proposes to "render size colours insoluble, by covering them with a thin layer of gelatine and silica of potash or soda." The Patentee claims the application of artificial sulphates of baryta and strontian, when mixed with gelatinous solutions, to obtain a ground in the tanned paintings.

"Lastly, paper pulp penetrated with gelatine, will give, by means of pressure, mouldings and objects of ornament, which are consolidated by immersion in tanning solutions." In some cases arsenious acid or arsenite of potash may be added to the gelatine for the better preservation of the article treated.

[Printed, 4*d.*.]

A.D. 1856, December 27.—N° 3084.

ATKIN, ISAAC, and MILLER, MARMADUKE.—"Improvements in folding lace, paper, and other fabrics." This invention consists, first, "in the use of a traversing stage," which is caused to move to and fro the distance of the required fold, by means of a crank and lever. Secondly, "in the use of a folding or 'carding' board having two or more troughs or grooves." This board has upright pieces fixed on it, as much apart as the width of the material to be folded, and of such a length as shall determine the length of the folds. By this means more than one length of fabric may be folded by one operation. Thirdly, "in the dropping of pins or 'wires' by machinery in folding." This may be effected by having four vertical tubes placed on the traversing stage, "having in them slits the entire length of the tubes, which slits are of such width as to allow the folding wires or pins to drop freely down without passing each other." The wires from one pair of tubes are dropped one at a time, and fall into corresponding slots, carrying with it the fabric, and holding it there at the extremity of the fold. When the traversing stage reverses, and proceeds to the extremity of the next fold, another wire is dropped from the other pair of tubes, and so on. The stock of wires are held in the tubes by bolts, which, on being withdrawn as described, drop only one wire at a time.

[Printed, 10*d.*.]

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1857.

A.D. 1857, February 18.—Nº 477.

DAVENPORT, THOMAS WILLIAM, and COLE, SAMUEL.—“A new or improved method of manufacturing and ornamenting “articles in papier maché and charcoal.” “This invention con-“sists in the manufacture and ornamentation of articles in papier “maché and charcoal, by the employment of cutters, stones, or “laps working in rotary or other suitable motion, for filing and “carving the before named articles; and also in the use of un-“covered wood laps for polishing the said articles; and, lastly, “glossing them by means of jewellers’ rouge.”

[Printed, 3d.]

A.D. 1857, February 19.—Nº 488.

CLAYTON, THOMAS.—“Improvements in machinery or appara-“tus for ornamenting and embossing wood, leather, paper, and “other similar materials.” “The object of this invention is to “give ornamentation to inferior woods, paper, or similar articles, “which I accomplish by passing the inferior woods through or “between heated metal rollers, the said rollers being engraved so as “to represent the reverse or counter-proof of the view or design to be “reproduced either sunk or in relief; they are hollow, and raised “to the desired temperature by the introduction of burning gas “or other suitable means, and as the wood or other material to “be ornamented passes through or between the said rollers I give “the requisite pressure to make the impression of the design “thereon. When necessary I subject the woods to ordinary dye “stuffs to obtain the color required, either before or after the “operation of the machine.” “I also employ flat dies, hollowed “or engraved, as the work may require, the lower die or matrix “being heated by gas, distributed through ordinary burners, on “the under side, the upper die being fixed to a screw, by means “of which the desired pressure upon the work is obtained, and “a perpendicular motion is procured by guides, in the usual “manner.”

[Printed, 1s.]

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A.D. 1857, February 21.—N° 517.

PHILLIPS, GEORGE.—(Provisional Protection only.) “Improvements in stationary cabinets, and in envelopes to be used therewith.” “This invention is designed to facilitate correspondence with persons residing in the ten postal districts of London, and consists, firstly, in forming such cabinets with pigeon holes or divisions corresponding with the ten postal districts, and in the same relative position to each other, each pigeon hole or division being labelled with the initial letter or letters of its corresponding district. These divisions are intended to contain envelopes.”

“The cabinet may also be provided with other divisions for note paper, letters answered and unanswered, postal guide, wax tapers, label damper, receipt and postage stamps, &c.”

“In the interior of the lid or door of the cabinet is a map of London, with its postal divisions plainly marked out, and lettered to correspond with the pigeon-holes.”

“The envelopes to be placed in the several pigeon-holes or divisions are to have the corresponding initial letters printed thereon in the right hand corner below where the address is to be written.”

[Printed, 3d.]

A.D. 1857, February 28.—N° 597.

JENNENS, THEODORE HYLA.—“A new or improved manufacture of rollers or cylinders for printing fabrics.” This is effected by substituting or forming the bodies of such rollers or cylinders of papier maché, paper pulp, or other such like suitable fibrous material, either by pressing or forming them in suitable moulds, or by winding suitable paper coated with paste, or other suitably adhesive material, around a parallel or slightly tapered mandrill, and which mandrill I purpose to be of the size of the spindle on which such roller or cylinder would be placed when required in printing fabrics. And in the process of wrapping around such paper, all surplus or excess of paste or other adhesive material must be pressed out, and the paper wrapped around one course on the other as tight and closely as possible, taking care to dry and stove the so formed cylinder during this process at every third or fourth layer of paper, according to its

" thickness or to the amount of moisture absorbed in the process " of making up; and when this paper body is of sufficient size, " and thoroughly dry and hardened by oiling and stoving, in the " usual way in which papier maché goods are treated, or otherwise " as shall be found most convenient, I draw over it a tube of " copper or copper alloy of from three-eighths to one-half of an " inch in thickness, more or less as required, the internal diameter " of which must be of the full size of the paper cylinder or body " so as to admit of being readily placed over it; in this state the " body or cylinder, with its copper covering, is placed on a suit- " able mandrill, and is pulled through a hole or holes at a com- " mon draw-bench, which so contracts the circumference of the " copper casing, that it impinges or compresses the paper body " into a hard, compact, and fixed state around the mandrill on " which it has been drawn, and is now in a state to be cut off to " its proper length and turned on its surface and removed from " the mandrill, for the purpose of being engraved."

[Printed, 6d.]

A.D. 1857, March 12.—Nº 711.

DERRIEY, JOSEPH JULES.—" Improvements in machines for " manufacturing lozenges, wafers, or pastilles of paste materials." Partly " applicable also to the printing and cutting out of address " cards, directions, and other similar impressions of a small " compass." The portion of this invention applicable to printing and cutting cards, &c., consists of a series of punches suitably actuated up and down by means of a bell crank motion, and which are caused to descend through a die plate and down through the paste or card paper. The pieces punched out are carried further down, and with them corresponding pistons are depressed. When the punches recede the pistons with the cut material upon them are retained in the depressed position by means of a spring. The pistons may be arranged longitudinally on the periphery of a cylinder, and after each stroke of the punches the cylinder is caused to make half a revolution, when the punches become liberated, and springs acting behind cause them to discharge the punched out material on a platform beneath. The remainder of the material out of which the cards or lozenges have been punched is carried forward by an endless cloth. The face of the punches,

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as well as the surface of the pistons, may be ornamented with figures or letters.

[Printed, 1s. 1d.]

A.D. 1857, March 30.—N<sup>o</sup> 881.

**GRANGER, ARTHUR.**—(Provisional Protection only.) “Im-“ proved manufacture of safety envelope.” “To this end I “ employ what is generally known as a ‘tuck fastening,’ forming “ the upper or seal flap with a tongue, which is cemented on its “ inner face, and is passed through a slot formed in the pocket “ flap to bring the cemented surface into contact with the side “ flaps which lie beneath it.”

[Printed, 3d.]

A.D. 1857, April 11.—N<sup>o</sup> 1020.

**COURENQ, HENRY FÉLIX.**—“Improvements in machinery for “ruling paper.” The paper to be ruled is caused to pass in a continuous manner over a cylinder covered with blotting paper or otherwise, and then carried forward by means of an endless apron. The paper is retained on the cylinder by endless revolving cords which bear upon it so as to prevent it slipping. The pen holders are mounted on pivots which oscillate, and are furnished with friction rollers bearing on the main cylinder so as to regulate the pressure of the pens. The pens may be elevated and depressed when required by a lever and counterpoise weights, and the ink required is supplied through pipes furnished with cocks.

[Printed, 9d.]

A.D. 1857, May 4.—N<sup>o</sup> 1257.

**DESBOROUGH, SPENDLOVE.**—(Provisional Protection only.) “An improvement in the manufacture of the seal flaps of en-“velopes and letter paper.” In the act of embossing or printing such seal flaps, the dies or apparatus used are arranged to puncture the paper above the sealing portions in such manner that the paper above the seals will more readily give way, and thereby exhibit fraudulent attempts at opening and resealing.

[Printed, 3d.]

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A.D. 1857, May 15.—N° 1380.

MARRIOTT, WILLIAM, and SUGDEN, DAVID.—(Provisional Protection only.) “Improvements in heating press plates for “ pressing woollen, worsted, cotton, silk, or other fabrics, paper, “ and other articles.” “Our plan of heating is by means of “ superheated steam passed into a steam chest containing the “ plates to be heated.”

[Printed, 3d.]

A.D. 1857, May 19.—N° 1408.

OTT, JACOB ULRICH, and UDLOFF, FRIEDRICH AUGUST MORITZ.—(Provisional Protection only.) “Improvements in “ ruling paper and in the pens or instruments for the same.” “The pens or instruments are each made of a separate and “ distinct piece of metal of some three inches long, the metal “ being folded or doubled in the direction of its length and more “ or less closed at the point, to make a line more or less fine, as “ required; the metal is left more open higher up, to afford “ capacity for the ink, which also permits it to flow freely to the “ point. The upper part of the pen is open (that is to say) the “ metal is not folded close. In order to hold these pens for “ ruling, we place them between two pieces of wood, the one “ having two saw cuts across near to each other to receive the “ edges of the metal. The pens being placed in the several pairs “ of saw cuts in the one piece, the other piece is screwed against “ the pens so inserted and by which they are held.”

[Printed, 3d.]

A.D. 1857, May 23.—N° 1455.

COULON, PASCAL FLORENTIN.—(Provisional Protection only.) “ Certain improvements in velveting paper and textile fabrics.” “ The invention consists in the employment of human and animal “ hair for replacing the ordinary shearings for producing a velvet “ coating on painted paper and textile fabrics, but especially on “ the former. The hair is dyed to the required shade of colour, “ and should be brought to an impalpable powder.”

[Printed, 3d.]

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A.D. 1857, June 2.—N° 1553.

BENTLEY, NEWTON, and ALCOCK, JOHN.—“ Improvements in machinery or apparatus for forging and stamping metals, “ [wood, leather, cloth, caoutchouc, gutta percha, papier maché, “ ivory, bone, &c.,] which is also applicable to pile driving, crushing ores and seeds, beetling and fulling woven fabrics, and other “ similar purposes.” “ We attach one or more hammers, stamps, “ or fallers, each to a vertical bar or slide, which rises and falls in “ suitable frames or bearings. On this vertical sliding bar we fix “ a stud or pivot, with or without an antifriction pulley, which “ being acted upon by an intermittent spiral cam placed on a ver- “ tical shaft, causes the said hammer, stamp, or faller to rise and “ fall at any required distance; or we place the cam itself upon a “ vertical bar or shaft, at the lower end of which is the hammer or “ stamp, both rising and falling together. The spiral intermittent “ cam is formed by having, upon a cylinder, shaft, or disc, one or “ more spiral projections, either internally or externally, extending “ only over a part of its circumference, leaving a space or spaces “ between each terminus of the projection. The said cam may be “ raised or lowered on the vertical shaft and fixed in any desired “ position, for the purpose of adjusting the length of lift or stroke; “ or the position of the stud on the bar or shaft may be regu- “ lated for the same purpose. When the stud or pulley is at “ the commencement of the spiral projection the lift is the “ greatest, giving the heaviest blow: but when near the other “ terminus the lift is the least, giving the lightest blow. The “ space or spaces in the cam or spiral projection permit the falling “ of the hammer, stamp, or faller.”

[Printed, 10*z.*.]

A.D. 1857, June 6.—N° 1599.

DOPTER, ALFRED JEAN VINCENT.—“ Improvements in orna- “ menting cloth, wood, metal, leather, and other surfaces.” The surface to be ornamented is first coated with a suitable adhesive matter; a plate of wood is then divided into compartments, and the desired pattern or design hollowed out on its surface. These hollows may be filled with various colours, and the surface to be ornamented laid over. When the whole is reversed the colour *falls in powder* and adheres to the surface of the coated fabric: or

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the colours may be applied by being sprinkled on a suitably perforated pattern placed over the surface to be ornamented : or by means of a "stretched skin, cloth, or other tissue or surface," placed on the colours in the several compartments, in order to take off the different coloured powders they contain, and transfer them on to the material which is to be ornamented.

[Printed, 8d.]

A.D. 1857, June 15.—N° 1670.

**SMITH, WILLIAM.**—(A communication from Rochette, A. E.)—(Provisional Protection only.) "Improvements in chromo-typographical printing presses." "The sheet of paper to be printed is laid securely on a moveable tympan, which is made to revolve by quarters of a revolution after each stroke of the press. Four proofs [of different portions of the figure or design] by this process are printed simultaneously on a sheet of paper, each proof with a different tint or color, and successively each one with four colors. After receiving four impressions the sheet becoming loose is taken out, and a new one replaced on the tympan."

[Printed, 8d.]

A.D. 1857, July 7.—N° 1877.

**VON CANIG, WILHELM ADOLF.**—(Provisional Protection only.)—"Compound or composition to be used as a substitute for gum, paste, and other adhesive materials, and for finishing, sizing, or stiffening fabrics and other articles to which the same is or may be applicable." "In carrying my invention into effect, I take the plant called carragheen or Irish moss, called also fucus Irlandicus; and after sorting, I dry the same by heat and reduce it to powder, and bleach it; I mix the powdered plant with an equal quantity of starch or flour of rye, corn, acorns, or chestnut, or the quantities may be varied according to the purpose to which the mixture is to be applied."

[Printed, 8d.]

A.D. 1857, July 17.—N° 1988.

**ROBERTS, THOMAS, and DALE, JOHN.**—"Improvements in obtaining pigments from dyewoods, and in the application of a

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" pigment to printing paper hangings." These improvements relate "to obtaining pigments from dyewoods, and the principle " proceeded upon is to immerse them in a fluid containing a sub-  
stance or substances which will take up the coloring matter as " it is dissolved." "Also, to the use of barwood as a pigment, " and in the application of a pigment obtained from barwood [or " from other suitable dyewood, such as 'red wood or red sanders " ' wood' and 'cam wood'], to the purpose of printing paper " hangings." A suitable quantity of water and of dyewood may be placed in a vessel of wood and brought to the boil by means of steam. To this is added sufficient persulphate of tin (other salts of tin or iron may be used), the oxide of which is precipitated by the dilution, as is well understood by chemists. At the end of several hours heating and stirring the " colouring matter will have " been extracted from the wood and taken up by the oxide of tin, " forming with it a bright red suitable for a pigment, but mixed " with particles of the ground or chipped wood." The woody particles may be separated from the dyed oxide by subsidence and by a sieve, and after being washed and filtered the lake is ready for use. "The wood remaining in the vessel [dyed as above or by " other means] will be found to be a coloured material, and " having been reduced by grinding or other means to fine par-  
ticles, is applicable as a pigment for general purposes." The colouring matter of barwood, when extracted by means of hot " alkaline solutions," as the "carbonates, borates, and stannates " of soda, potash, and ammonia, may be "added to oxide of tin " or other oxide or salt, according to the color required: and the " pigment thus produced may be modified in consistence by the " addition of foreign substances, as chalk, china clay, sulphate of " barytes, &c."

[Printed, 3d.]

A.D. 1857, July 23.—Nº 2021.

CLARK, MOSES, and BERTRAM, GEORGE.—"Improvements " in machinery or apparatus for cutting paper." The general arrangement of the machine for effecting these improvements consists of a series of rollers and clamps, between or over which the sheet of paper is caused to pass. The sheet of paper is cut on entering the machine into strips, by circular knives, in the usual

manner, and on leaving the machine is cut transversely into the desired lengths by a knife, acting against a blade in the ordinary way. On the paper leaving the circular cutters, the severed sheet is held tight by a pair of clamps, actuated by excentrics, and drawn forward by the weight of a loose roller attached to the ends of two levers and bearing on the surface of the paper. The clamp is then made to rise and liberate the paper, when it is drawn forward a measured length by means of levers and another loose roller, as before. The clamp then again descends and holds the paper, while another clamp, in advance of the first, which held the paper between the measuring levers and the transverse knife, during the descent of these levers, is elevated, and allows a measured length of paper to pass on between rollers to the knife. From thence the cut pieces are carried by means of an endless band.

[Printed, 11d.]

A.D. 1857, August 20.—N° 2214.

CHAMBERLAIN, AMOS PIERCE.—“Improvements in machines “for cutting corks and other substances.” These improvements relate chiefly to the cutting of corks, but the “system of knife “and carriage is also applicable for cutting india-rubber, caout-“chouc, paper, and other substances.” The knife employed is made circular and caused to rotate at a high speed (“say 2,000 “times per minute”). The knife edge for cutting the long lengths is flat on one side and bevelled on the other, while that used to cut off the “proper lengths” should be bevelled on both sides alike. The material to be cut is placed on a sliding carriage so arranged as to pass near the lower part of the circumference of the cutting knife, and not at the centre level, as is the case when saws are used. The carriage, suitably guided, is advanced to the knife by means of a light pressure of the hand.

[Printed, 10d.]

A.D. 1857, August 25.—N° 2243.

GEDGE, JOHN.—(A communication from Ferdinand Thénard.)—“ Improvements in envelopes for letters and other documents.” These improvements consist, first, in forming the flaps of envelopes in such a manner that the fourth or closing flap when wetted and closed down will adhere to the letter enclosed as well as to

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the other flaps. Secondly, in inserting a thread of silk or wire, or other material round the sides or edges of the envelope, secured thereto by means of any adhesive matter, whereby on drawing the thread by its end left loose, the paper of the envelope will be torn or cut along the edge and the envelope opened.

[Printed, 8d.]

A.D. 1857, September 5.—N° 2326.

ARCHER, HENRY.—(Provisional Protection only.) “Improvements in envelopes.” “Security against opening is obtained by scoring or cutting wholly or partially through and into strips the lappel or that part of the envelope which, when the envelope is closed, is attached or stuck down by any convenient cement to the body of the article. In addition to this I propose, if required, to make use of an adhesive cement or preparation, which will resist the ordinary processes for dissolving or softening the same.”

[Printed, 8d.]

A.D. 1857, September 9.—N° 2349.

BERTOU, LEON LOUIS HONORÉ.—“Improvements in the manufacture or production of ornamental wrappers or packings for fabrics or other goods.” “The process which I prefer to adopt for the production of indelible trade marks or designs, consists in laying the paper or fabric to be treated upon a metal plate [or other hard substance], having the required design engraved in relief on its surface. Over the paper or fabric I then place a copper or zinc plate, and over that again are laid one or more sheets of cardboard, and finally another zinc plate. The whole is then passed through an ordinary copper-plate printing machine, or is submitted to pressure in any other convenient manner.

“Paper or woven fabrics treated in the above manner may be applied in various ways, such as bands, bags, tickets, boxes, cases, linings, and in general may be used on all occasions where wrappers or envelopes are required.”

[Printed, 8d.]

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A.D. 1857, September 10.—N° 2359.

HOUCHEIN, RICHARD.—(Provisional Protection only.) “An improved press for punching, stamping, and embossing, or otherwise for cutting out paper, leather, or other materials, and for fixing and closing eyelets.” “This machine consists of a tripod or other stand, to which are attached suitable levers or eccentrics for giving motion to a plunger, which works in suitable guides or bearings cast with or attached to the stand, and which are afterwards accurately bored to fit the plunger. To this plunger are fitted the necessary dies, cutters, or punches required for use. Immediately underneath the plunger is the seat or bed of the machine, upon which the materials to be bossed or punched or placed, it being made perfectly true with the plunger. The machine is set in motion by means of a treadle connected with the levers, and worked by the foot.”

[Printed, 8d.]

A.D. 1857, October 6.—N° 2563.

ROBINSON, GEORGE THOMAS.—“A machine for obliterating postage stamps on letters, at the same time stamping the post marks and registering the number of letters so stamped.” In this machine the letters are placed in a box having an opening in the bottom. Under this opening pieces of elastic material or fingers are caused to rotate, which pressing against the lowest letter in the pile carries it forward through a slit in the end of the box, and between two cylinders, one of which acts as the impression cylinder or bowl, and on the lower one is placed the desired marks and dates required to be printed on the letter, suitably supplied with ink. The passage of more than one letter at a time is prevented by a flexible fringe of whalebone placed at the slit, which keeps back all except the lowest letter that is being actuated by the elastic fingers. A pendulum and ratchet wheel motion is suitably connected, which, actuating a registering apparatus gives the number of letters so stamped and passed on.

[Printed, 9d.]

A.D. 1857, October 9.—N° 2591.

PUJOL, LéON.—(Provisional Protection only.) “Improvements in envelopes and letter paper.” “The object of the invention is

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“ to afford means of ascertaining the address of the party directing  
“ a letter without requiring his address to be visible on the outside  
“ of the letter. I give to the flap by which the envelope is closed  
“ a peculiar form [with a lengthened end], which allows to un-  
“ fasten a part of the said flap whilst the envelope still remains  
“ closed, so that no communication of the enclosed letter can be  
“ taken.” The lengthened part” is to contain on its inner side  
the “address or other known mark of the parties by whom the  
“ letter is directed.” “I apply the same principle to letter paper,  
“ viz., by applying the mark or direction on the inside of that  
“ part of the margin of the paper which is to lay uppermost on the  
“ back part of the letter when the paper is folded up as a letter.  
“ In this case a part of the margin itself may serve for bearing on  
“ the inside the required direction, and this part being marked on  
“ the outside by any suitable sign. This part is only to be cut off  
“ in order to see the direction, without requiring any further  
“ opening of the letter.”

[Printed, 3d.]

A.D. 1857, October 12.—No. 2607.

BEARD, GEORGE.—“Improvements in mechanism for produc-  
“ ing impressions on paper or other surfaces.” In this apparatus  
the die, type, or block is attached to the lower end of a plunger,  
which may be elevated or depressed by a lever. The die, type, or  
block is furnished with colour by means of an oscillating furnish-  
ing roller, actuated by a cranked lever and a pin attached to the  
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across the surface of the die, &c., and its depression to carry back  
the roller to a pad supplied with colour, over which it rolls.

[Printed, 6d.]

A.D. 1857, October 14.—N° 2626.

JOHNSON, JOHN HENRY.—(A communication from Bertou,  
Leon Louis Honoré.)—“ Improvements in producing figured  
“ paper to be used in teaching writing and drawing.” This in-  
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“ figures, devices, or designs,” by means of an engraved metal  
plate.

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"The mode of using these prepared sheets of paper consists in  
"simply tracing or following the lines or marks of the design or  
"device with a lead pencil or other marking instrument, whereby  
"the elementary principles of writing or drawing will be learnt  
"with ease and facility."

[Printed, 3d.]

A.D. 1857, October 26.—Nº 2713.

**DE CLIPPELLE, CHARLES.**—"Improvements in the manufacture of boots and shoes, harness, and driving straps, which improvements are applicable to uniting various materials together, and also for waterproofing." "My invention consists in producing a composition or cement suitable,—First, for uniting together materials of the same or of a different kind, such as iron to wood, for attaching a bullet to its wooden cartridge, leather to leather, cloth to cloth, or leather to cloth, for the manufacture of boots and shoes, pipes, harness, driving straps and other articles."

"Secondly, for waterproofing ropes, cords, cables, cardboard, paper, pipes, cases, trunks, boats, and wood, by covering them with the composition."

"Thirdly, for forming a paste susceptible when heated of being moulded into rollers and fancy articles."

"The composition or cement is formed as follows:—Sulphuret of carbon about one pint and three quarters, gutta percha about nine ounces and a half, heated and digested together for several days.

[Printed, 4d.]

A.D. 1857, December 19.—Nº 3118.

**FURNIVAL, RICHARD.**—"Improvements in machinery or apparatus for cutting paper, cardboard, and other similar articles." These improvements consist "in imparting to the cutting knife or blade a reciprocating motion in a horizontal lateral direction across the pile, simultaneously with or during the time of the descent of the knife through such pile. This may be effected by a vertical eccentric or vertical heart-shaped shaft, or other equivalent substitute, connected with the knife, which will pro-

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“ duce the required motion, and may be connected with and  
“ actuated by the shaft employed to cause the descent of the knife  
“ through the paper or other material.”

[Printed, 9d.]

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